

245

<210> 3  
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<212> DNA  
<213> Homo sapiens

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&lt;210&gt; 4

&lt;211&gt; 335

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4

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      20              25              30

Lys Glu Met Val Leu Ser Glu Lys Val Ser Gln Leu Met Glu Trp Thr
      35              40              45

Asn Lys Arg Pro Val Ile Arg Met Asn Gly Asp Lys Phe Arg Arg Leu
      50              55              60

Val Lys Ala Pro Pro Arg Asn Tyr Ser Val Ile Val Met Phe Thr Ala
      65              70              75              80

Leu Gln Leu His Arg Gln Cys Val Val Cys Lys Gln Ala Asp Glu Glu
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Phe Gln Ile Leu Ala Asn Ser Trp Arg Tyr Ser Ser Ala Phe Thr Asn
      100             105             110

Arg Ile Phe Phe Ala Met Val Asp Phe Asp Glu Gly Ser Asp Val Phe
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Gln Met Leu Asn Met Asn Ser Ala Pro Thr Phe Ile Asn Phe Pro Ala
      130             135             140

Lys Gly Lys Pro Lys Arg Gly Asp Thr Tyr Glu Leu Gln Val Arg Gly
      145             150             155             160

Phe Ser Ala Glu Gln Ile Ala Arg Trp Ile Ala Asp Arg Thr Asp Val
      165             170             175

Asn Ile Arg Val Ile Arg Pro Pro Asn Tyr Ala Gly Pro Leu Met Leu
      180             185             190

Gly Leu Leu Leu Ala Val Ile Gly Gly Leu Val Tyr Leu Arg Arg Ser
      195             200             205

Asn Met Glu Phe Leu Phe Asn Lys Thr Gly Trp Ala Phe Ala Ala Leu
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Cys Phe Val Leu Ala Met Thr Ser Gly Gln Met Trp Asn His Ile Arg
      225             230             235             240

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Gly Pro Pro Tyr Ala His Lys Asn Pro His Thr Gly His Val Asn Tyr  
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Ala Ala Thr Ser Asp Met Asp Ile Gly Lys Arg Lys Ile Met Cys Val  
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 <211> 1697  
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<210> 6  
 <211> 158  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 6

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Glu Leu Glu Ile Ser Gly Lys Val Arg Ser Leu Ser Ala Ser Leu Trp  
 35 40 45

Ser Leu Thr His Leu Thr Ala Leu His Leu Ser Asp Asn Ser Leu Ser  
 50 55 60

Arg Ile Pro Ser Asp Ile Ala Lys Leu His Asn Leu Val Tyr Leu Asp  
 65 70 75 80

Leu Ser Ser Asn Lys Ile Arg Ser Leu Pro Ala Glu Leu Gly Asn Met  
 85 90 95

Val Ser Leu Arg Glu Leu His Leu Asn Asn Asn Leu Leu Arg Val Leu  
 100 105 110

Pro Phe Glu Leu Gly Lys Leu Phe Gln Leu Gln Thr Leu Gly Leu Lys  
 115 120 125

Gly Met Thr Ser Ile Phe Val Leu Leu Met Val Cys Val Tyr Val Phe  
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Glu Ser Lys Glu Ala Lys Lys Leu Ser Ala Arg Gly Phe Phe  
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&lt;210&gt; 7

&lt;211&gt; 1462

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 7

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<210> 8  
 <211> 248  
 <212> PRT  
 <213> Homo sapiens

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 35 40 45  
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 50 55 60  
 Gly Gln Val Leu Asp Thr Gly Lys Arg Lys Arg His Val Pro Tyr Ser  
 65 70 75 80  
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 85 90 95  
 Ile Leu Asp Tyr Ser Val His Ala Glu Arg Lys Gly Ser Leu Arg Tyr  
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 Ala Lys Gly Gln Ser Gln Thr Met Ala Thr Leu Lys Gly Leu Val Gln  
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&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 9

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2104

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&lt;210&gt; 10

&lt;211&gt; 373

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 10

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Met Leu Arg Ser Val Trp Asn Phe Leu Lys Arg His Lys Lys Lys Cys
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Ile Phe Leu Gly Thr Val Leu Gly Gly Val Tyr Ile Leu Gly Lys Tyr
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Gly Gln Lys Lys Ile Arg Glu Ile Gln Glu Arg Glu Ala Ala Glu Tyr
          35             40             45

Ile Ala Gln Ala Arg Arg Gln Tyr His Phe Glu Ser Asn Gln Arg Thr
          50             55             60

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 Pro Ser Asn Lys Leu Glu Ile Trp Glu Asp Leu Lys Ile Ile Ser Phe  
 100 105 110  
 Thr Arg Ser Thr Val Ala Val Tyr Ser Thr Cys Met Leu Val Val Leu  
 115 120 125  
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 145 150 155 160  
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 180 185 190  
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 225 230 235 240  
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 245 250 255  
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<210> 12

<211> 837

<212> PRT

<213> Homo sapiens

<400> 12

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 35 40 45  
 Arg Glu Phe Asn Arg Asn Gln Arg Lys Asp Ser Glu Gly Tyr Ser Glu  
 50 55 60  
 Ser Pro Asp Leu Glu Phe Glu Tyr Ala Asp Thr Asp Lys Trp Ala Ala  
 65 70 75 80  
 Glu Leu Ser Glu Leu Tyr Ser Tyr Thr Glu Gly Pro Glu Phe Leu Met  
 85 90 95  
 Asn Arg Lys Cys Phe Glu Glu Asp Phe Arg Ile His Val Thr Asp Lys  
 100 105 110  
 Lys Trp Thr Glu Leu Asp Thr Asn Gln His Arg Thr His Ala Met Arg  
 115 120 125  
 Leu Leu Asp Gly Leu Glu Val Thr Ala Arg Glu Lys Arg Leu Lys Val  
 130 135 140  
 Ala Arg Ala Ile Leu Tyr Val Ala Gln Gly Thr Phe Gly Glu Cys Ser  
 145 150 155 160  
 Ser Glu Ala Glu Val Gln Ser Trp Met Arg Tyr Asn Ile Phe Leu Leu  
 165 170 175  
 Leu Glu Val Gly Thr Phe Asn Ala Leu Val Glu Leu Leu Asn Met Glu  
 180 185 190  
 Ile Asp Asn Ser Ala Ala Cys Ser Ser Ala Val Arg Lys Pro Ala Ile  
 195 200 205  
 Ser Leu Ala Asp Ser Thr Asp Leu Arg Val Leu Leu Asn Ile Met Tyr  
 210 215 220  
 Leu Ile Val Glu Thr Val His Gln Glu Cys Glu Gly Asp Lys Ala Glu  
 225 230 235 240  
 Trp Arg Thr Met Arg Gln Thr Phe Arg Ala Glu Leu Gly Ser Pro Leu  
 245 250 255  
 Tyr Asn Asn Glu Pro Phe Ala Ile Met Leu Phe Gly Met Val Thr Lys  
 260 265 270

Phe Cys Ser Gly His Ala Pro His Phe Pro Met Lys Lys Val Leu Leu  
 275 280 285  
 Leu Leu Trp Lys Thr Val Leu Cys Thr Leu Gly Gly Phe Glu Glu Leu  
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 Gln Ser Met Lys Ala Glu Lys Arg Ser Ile Leu Gly Leu Pro Pro Leu  
 305 310 315 320  
 Pro Glu Asp Ser Ile Lys Val Ile Arg Asn Met Arg Ala Ala Ser Pro  
 325 330 335  
 Pro Ala Ser Ala Ser Asp Leu Ile Glu Gln Gln Gln Lys Arg Gly Arg  
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 Arg Glu His Lys Ala Leu Ile Lys Gln Asp Asn Leu Asp Ala Phe Asn  
 355 360 365  
 Glu Arg Asp Pro Tyr Lys Ala Asp Asp Ser Arg Glu Glu Glu Glu Glu  
 370 375 380  
 Asn Asp Asp Asp Asn Ser Leu Glu Gly Glu Thr Phe Pro Leu Glu Arg  
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 Asp Glu Val Met Pro Pro Pro Leu Gln His Pro Gln Thr Asp Arg Leu  
 405 410 415  
 Thr Cys Pro Lys Gly Leu Pro Trp Ala Pro Lys Val Arg Glu Lys Asp  
 420 425 430  
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 450 455 460  
 Glu Ser Ile Lys Thr Leu Lys Gln His Lys Tyr Thr Ser Ile Ala Glu  
 465 470 475 480  
 Val Gln Ala Gln Met Glu Glu Glu Tyr Leu Arg Ser Pro Leu Ser Gly  
 485 490 495  
 Gly Glu Glu Glu Val Glu Gln Val Pro Ala Glu Thr Leu Tyr Gln Gly  
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 530 535 540  
 Leu Ala Asp Val Leu Pro Glu Glu Met Pro Thr Thr Val Leu Gln Ser  
 545 550 555 560  
 Met Lys Leu Gly Val Asp Val Asn Arg His Lys Glu Val Ile Val Lys  
 565 570 575  
 Ala Ile Ser Ala Val Leu Leu Leu Leu Lys His Phe Lys Leu Asn  
 580 585 590

His Val Tyr Gln Phe Glu Tyr Met Ala Gln His Leu Val Phe Ala Asn  
 595 600 605  
 Cys Ile Pro Leu Ile Leu Lys Phe Phe Asn Gln Asn Ile Met Ser Tyr  
 610 615 620  
 Ile Thr Ala Lys Asn Ser Ile Ser Val Leu Asp Tyr Pro His Cys Val  
 625 630 635 640  
 Val His Glu Leu Pro Glu Leu Thr Ala Glu Ser Leu Glu Ala Gly Asp  
 645 650 655  
 Ser Asn Gln Phe Cys Trp Arg Asn Leu Phe Ser Cys Ile Asn Leu Leu  
 660 665 670  
 Arg Ile Leu Asn Lys Leu Thr Lys Trp Lys His Ser Arg Thr Met Met  
 675 680 685  
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 690 695 700  
 Lys Gln Ala Met Met Gln Leu Tyr Val Leu Lys Leu Lys Val Gln  
 705 710 715 720  
 Thr Lys Tyr Leu Gly Arg Gln Trp Arg Lys Ser Asn Met Lys Thr Met  
 725 730 735  
 Ser Ala Ile Tyr Gln Lys Val Arg His Arg Leu Asn Asp Asp Trp Ala  
 740 745 750  
 Tyr Gly Asn Asp Leu Asp Ala Arg Pro Trp Asp Phe Gln Ala Glu Glu  
 755 760 765  
 Cys Ala Leu Arg Ala Asn Ile Glu Arg Phe Asn Ala Arg Arg Tyr Asp  
 770 775 780  
 Arg Ala His Ser Asn Pro Asp Phe Leu Pro Val Asp Asn Cys Leu Gln  
 785 790 795 800  
 Ser Val Leu Gly Gln Arg Val Asp Leu Pro Glu Asp Phe Gln Met Asn  
 805 810 815  
 Tyr Asp Leu Trp Leu Glu Arg Glu Val Phe Ser Lys Pro Ile Ser Trp  
 820 825 830  
 Glu Glu Leu Leu Gln  
 835

&lt;210&gt; 13

&lt;211&gt; 1264

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 13

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 acacaagcca agatttcagg caaacaatga gcaagaaata tcccttcacg ttggaagttt 180  
 attacaaatc cactgagaag tctggaatgt atggaatcag agagctagat caaaaaacat 240  
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tctcgtgcct ctgcttctcg agtagctggg actacaggtg cgtgccacca tgcccagctc 600
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<210> 14  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

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          20             25             30
Lys Met His Thr Ser Gln Asp Phe Arg Gln Thr Met Ser Lys Lys Tyr
          35             40             45
Pro Phe Ile Leu Glu Val Tyr Tyr Lys Ser Thr Glu Lys Ser Gly Met
          50             55             60
Tyr Gly Ile Arg Glu Leu Asp Gln Lys Thr Trp Leu Asn Ser Lys Asn
          65             70             75             80

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<210> 15  
 <211> 2671  
 <212> DNA  
 <213> Homo sapiens

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2671

&lt;210&gt; 16

&lt;211&gt; 804

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 16

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Met Ala Ala His Arg Pro Gly Pro Leu Lys Gln Gln Asn Lys Ala His
  1             5             10             15

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Lys Gly Gly Arg His Arg Gly Arg Gly Ser Ala Gln Arg Asp Gly Lys
      20             25             30

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Gly Arg Leu Ala Leu Lys Thr Leu Ser Lys Lys Val Arg Lys Glu Leu
      35             40             45

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Ser Arg Val Asp Gln Arg His Arg Ala Ser Gln Leu Arg Lys Gln Lys
      50             55             60

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Lys Glu Ala Val Leu Ala Glu Lys Arg Gln Leu Gly Gly Lys Asp Gly
      65             70             75             80

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Pro Pro His Gln Val Leu Val Val Pro Leu His Ser Arg Ile Ser Leu
      85             90             95

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Pro Glu Ala Met Gln Leu Leu Gln Asp Arg Asp Thr Gly Thr Val His
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Leu Asn Glu Leu Gly Asn Thr Gln Asn Phe Met Leu Leu Cys Pro Arg

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115	120	125
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Val Val Leu Asp Met Ala Lys Val Ala Asp Thr Ile Leu Phe Leu Leu		
145	150	155
		160
Asp Pro Leu Glu Gly Trp Asp Ser Thr Arg Asp Tyr Cys Leu Ser Cys		
	165	170
		175
Leu Phe Ala Gln Gly Leu Pro Thr Tyr Thr Leu Ala Val Gln Gly Ile		
	180	185
		190
Ser Gly Leu Pro Leu Lys Lys Gln Ile Asp Thr Arg Lys Lys Leu Ser		
	195	200
		205
Lys Ala Val Glu Lys Arg Phe Pro His Asp Lys Leu Leu Leu Asp		
	210	215
		220
Thr Gln Gln Glu Ala Gly Met Leu Leu Arg Gln Leu Ala Asn Gln Lys		
225	230	235
		240
Gln Gln His Leu Ala Phe Arg Asp Arg Arg Ala Tyr Leu Phe Ala His		
	245	250
		255
Ala Val Asp Phe Val Pro Ser Glu Glu Asn Asn Leu Val Gly Thr Leu		
	260	265
		270
Lys Ile Ser Gly Tyr Val Arg Gly Gln Thr Leu Asn Val Asn Arg Leu		
	275	280
		285
Leu His Ile Val Gly Tyr Gly Asp Leu Pro Asp Glu Gln Ile Asp Ala		
	290	295
		300
Pro Gly Asp Pro Phe Pro Leu Asn Pro Arg Gly Ile Lys Pro Gln Lys		
305	310	315
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Asp Pro Asp Met Ala Met Glu Ile Cys Ala Thr Asp Ala Val Asp Asp		
	325	330
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Met Glu Glu Gly Leu Lys Val Leu Met Lys Ala Asp Pro Gly Arg Gln		
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		350
Glu Ser Leu Gln Ala Glu Val Ile Pro Asp Pro Met Glu Gly Glu Gln		
	355	360
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Thr Trp Pro Thr Glu Glu Glu Leu Ser Glu Ala Lys Asp Phe Leu Lys		
	370	375
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Glu Ser Ser Lys Val Val Lys Lys Val Pro Lys Gly Thr Ser Ser Tyr		
385	390	395
		400
Gln Ala Glu Trp Ile Leu Asp Gly Gly Ser Gln Ser Gly Gly Glu Gly		
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		415
Asp Glu Tyr Glu Tyr Asp Asp Met Glu His Glu Asp Phe Met Glu Glu		
	420	425
		430
Glu Ser Gln Asp Glu Ser Ser Glu Glu Glu Glu Tyr Glu Thr Met		

435	440	445
Thr Ile Gly Glu Ser Val His Asp Asp Leu Tyr Asp Lys Lys Val Asp 450	455	460
Glu Glu Ala Glu Ala Lys Met Leu Glu Lys Tyr Lys Gln Glu Arg Leu 465	470	475 480
Glu Glu Met Phe Pro Asp Glu Val Asp Thr Pro Arg Asp Val Ala Ala 485	490	495
Arg Ile Arg Phe Gln Lys Tyr Arg Gly Leu Lys Ser Phe Arg Thr Ser 500	505	510
Pro Trp Asp Pro Lys Glu Asn Leu Pro Gln Asp Tyr Ala Arg Ile Phe 515	520	525
Gln Phe Gln Asn Phe Thr Asn Thr Arg Lys Ser Ile Phe Lys Glu Val 530	535	540
Glu Glu Lys Glu Val Glu Gly Ala Glu Val Gly Trp Tyr Val Thr Leu 545	550	555 560
His Val Ser Glu Val Pro Val Ser Val Val Glu Cys Phe Arg Gln Gly 565	570	575
Thr Pro Leu Ile Ala Phe Ser Leu Leu Pro His Glu Gln Lys Met Ser 580	585	590
Val Leu Asn Met Val Val Arg Arg Asp Pro Gly Asn Thr Glu Pro Val 595	600	605
Lys Ala Lys Glu Glu Leu Ile Phe His Cys Gly Phe Arg Arg Phe Arg 610	615	620
Ala Ser Pro Leu Phe Ser Gln His Thr Ala Ala Asp Lys His Lys Leu 625	630	635 640
Gln Arg Phe Leu Thr Ala Asp Met Ala Leu Val Ala Thr Val Tyr Ala 645	650	655
Pro Ile Thr Phe Pro Pro Ala Ser Val Leu Leu Phe Lys Gln Lys Ser 660	665	670
Asn Gly Met His Ser Leu Ile Ala Thr Gly His Leu Met Ser Val Asp 675	680	685
Pro Asp Arg Met Val Ile Lys Arg Val Val Leu Ser Gly His Pro Phe 690	695	700
Lys Ile Phe Thr Lys Met Ala Val Val Arg Tyr Met Phe Phe Asn Arg 705	710	715 720
Glu Asp Val Leu Trp Phe Lys Pro Val Glu Leu Arg Thr Lys Trp Gly 725	730	735
Arg Arg Gly His Ile Lys Glu Pro Leu Gly Thr His Gly His Met Lys 740	745	750
Cys Ser Phe Asp Gly Lys Leu Lys Ser Gln Asp Thr Val Leu Met Asn		

755

760

765

Leu Tyr Lys Arg Val Phe Pro Lys Trp Thr Tyr Asp Pro Tyr Val Pro  
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Glu Pro Val Pro Trp Leu Lys Ser Glu Ile Ser Ser Thr Val Pro Gln  
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Gly Gly Met Glu

<210> 17

<211> 2321

<212> DNA

<213> Homo sapiens

<400> 17

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&lt;210&gt; 22

&lt;211&gt; 208

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 22

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Leu Gln Val Leu Ala Leu Leu Gly Ala Ala His Glu Ser Ala Ala Met  
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Ala Ala Ser Ala Asn Ile Glu Asn Ser Gly Leu Pro His Asn Ser Ser  
 35 40 45

Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser Asp His Thr Asn  
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Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr Ser Val Ala Ser Asp  
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Ser Ser Asn Thr Thr Val Thr Thr Met Lys Pro Thr Ala Ala Ser Asn  
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Thr Thr Thr Pro Gly Met Val Ser Thr Asn Met Thr Ser Thr Thr Leu  
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Lys Ser Thr Pro Lys Thr Thr Ser Val Ser Gln Asn Thr Ser Gln Ile

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Leu Gly Val Leu Ser Ile Leu Tyr Ile Gly Cys Lys Met Tyr Tyr Ser		
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Arg Arg Gly Ile Arg Tyr Arg Thr Ile Asp Glu His Asp Ala Ile Ile		
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&lt;210&gt; 23

&lt;211&gt; 2361

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

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 <212> PRT  
 <213> Homo sapiens

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 Ser Val Pro Leu Tyr Leu Ile Tyr Pro Ser Val Glu Asn Val Arg Thr  
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 Ser Leu Glu Gly Tyr Pro Ala Gly Gly Ser Leu Pro Tyr Ser Ile Gln  
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 Thr Ala Glu Lys Gln Asn Trp Leu His Ser Tyr Phe His Lys Trp Ser  
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 Ala Glu Thr Ser Gly Arg Ser Asn Ala Met Pro His Ile Lys Thr Tyr  
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 Met Arg Pro Ser Pro Asp Phe Ser Lys Ile Ala Trp Phe Leu Val Thr  
 115 120 125  
 Ser Ala Asn Leu Ser Lys Ala Ala Trp Gly Ala Leu Glu Lys Asn Gly  
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 Thr Gln Leu Met Ile Arg Ser Tyr Glu Leu Gly Val Leu Phe Leu Pro  
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 Gly Ser Gln Glu Pro Met Ala Thr Phe Pro Val Pro Tyr Asp Leu Pro  
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 <212> DNA  
 <213> Homo sapiens

<400> 25

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&lt;210&gt; 26

&lt;211&gt; 545

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 26

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Phe Ser Leu Pro Phe Cys Val Gly Ser Lys Lys Ser Ile Ser His Tyr  
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His Glu Thr Leu Gly Glu Ala Leu Gln Gly Val Glu Leu Glu Phe Ser  
 35 40 45

Gly Leu Asp Ile Lys Phe Lys Asp Asp Val Met Pro Ala Thr Tyr Cys  
 50 55 60

Glu Ile Asp Leu Asp Lys Glu Lys Arg Asp Ala Phe Val Tyr Ala Ile  
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Lys Asn His Tyr Trp Tyr Gln Met Tyr Ile Asp Asp Leu Pro Ile Trp  
 85 90 95

Gly Ile Val Gly Glu Ala Asp Glu Asn Gly Glu Asp Tyr Tyr Leu Trp  
 100 105 110

Thr Tyr Lys Lys Leu Glu Ile Gly Phe Asn Gly Asn Arg Ile Val Asp  
 115 120 125

Val Asn Leu Thr Ser Glu Gly Lys Val Lys Leu Val Pro Asn Thr Lys  
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Ile Gln Met Ser Tyr Ser Val Lys Trp Lys Lys Ser Asp Val Lys Phe  
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Glu Asp Arg Phe Asp Lys Tyr Leu Asp Pro Ser Phe Phe Gln His Arg  
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Ile His Trp Phe Ser Ile Phe Asn Ser Phe Met Met Val Ile Phe Leu  
 180 185 190

Val Gly Leu Val Ser Met Ile Leu Met Arg Thr Leu Arg Lys Asp Tyr  
 195 200 205

Ala Arg Tyr Ser Lys Glu Glu Glu Met Asp Asp Met Asp Arg Asp Leu  
 210 215 220

Gly Asp Glu Tyr Gly Trp Lys Gln Val His Gly Asp Val Phe Arg Pro  
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Ser Ser His Pro Leu Ile Phe Ser Ser Leu Ile Gly Ser Gly Cys Gln  
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Ile Phe Ala Val Ser Leu Ile Val Ile Ile Val Ala Met Ile Glu Asp  
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Leu Tyr Thr Glu Arg Gly Ser Met Leu Ser Thr Ala Ile Phe Val Tyr  
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Ala Ala Thr Ser Pro Val Asn Gly Tyr Phe Gly Gly Ser Leu Tyr Ala  
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<210> 27  
 <211> 3136  
 <212> DNA  
 <213> Homo sapiens

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3136

&lt;210&gt; 28

&lt;211&gt; 591

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 28

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Gln Pro Pro Pro Pro Ile Thr Glu Glu Asp Ala Gln Asp Met Asp Ala 65 70 75 80		
Tyr Thr Leu Ala Lys Ala Tyr Phe Asp Val Lys Glu Tyr Asp Arg Ala 85 90 95		
Ala His Phe Leu His Gly Cys Asn Ser Lys Lys Ala Tyr Phe Leu Tyr 100 105 110		
Met Tyr Ser Arg Tyr Leu Ser Gly Glu Lys Lys Lys Asp Asp Glu Thr 115 120 125		
Val Asp Ser Leu Gly Pro Leu Glu Lys Gly Gln Val Lys Asn Glu Ala 130 135 140		
Leu Arg Glu Leu Arg Val Glu Leu Ser Lys Lys His Gln Ala Arg Glu 145 150 155 160		
Leu Asp Gly Phe Gly Leu Tyr Leu Tyr Gly Val Val Leu Arg Lys Leu 165 170 175		
Asp Leu Val Lys Glu Ala Ile Asp Val Phe Val Glu Ala Thr His Val 180 185 190		
Leu Pro Leu His Trp Gly Ala Trp Leu Glu Leu Cys Asn Leu Ile Thr 195 200 205		
Asp Lys Glu Met Leu Lys Phe Leu Ser Leu Pro Asp Thr Trp Met Lys 210 215 220		
Glu Phe Phe Leu Ala His Ile Tyr Thr Glu Leu Gln Leu Ile Glu Glu 225 230 235 240		
Ala Leu Gln Lys Tyr Gln Asn Leu Ile Asp Val Gly Phe Ser Lys Ser 245 250 255		
Ser Tyr Ile Val Ser Gln Ile Ala Val Ala Tyr His Asn Ile Arg Asp 260 265 270		
Ile Asp Lys Ala Leu Ser Ile Phe Asn Glu Leu Arg Lys Gln Asp Pro 275 280 285		
Tyr Arg Ile Glu Asn Met Asp Thr Phe Ser Asn Leu Leu Tyr Val Arg 290 295 300		
Ser Met Lys Ser Glu Leu Ser Tyr Leu Ala His Asn Leu Cys Glu Ile 305 310 315 320		
Asp Lys Tyr Arg Val Glu Thr Cys Cys Val Ile Gly Asn Tyr Tyr Ser 325 330 335		
Leu Arg Ser Gln His Glu Lys Ala Ala Leu Tyr Phe Gln Arg Ala Leu		

340                      345                      350  
 Lys Leu Asn Pro Arg Tyr Leu Gly Ala Trp Thr Leu Met Gly His Glu  
     355                      360                      365  
 Tyr Met Glu Met Lys Asn Thr Ser Ala Ala Ile Gln Ala Tyr Arg His  
     370                      375                      380  
 Ala Ile Glu Val Asn Lys Arg Asp Tyr Arg Ala Trp Tyr Gly Leu Gly  
     385                      390                      395                      400  
 Gln Thr Tyr Glu Ile Leu Lys Met Pro Phe Tyr Cys Leu Tyr Tyr Tyr  
                     405                      410                      415  
 Arg Arg Ala His Gln Leu Arg Pro Asn Asp Ser Arg Met Leu Val Ala  
                     420                      425                      430  
 Leu Gly Glu Cys Tyr Glu Lys Leu Asn Gln Leu Val Glu Ala Lys Lys  
                     435                      440                      445  
 Cys Phe Trp Ile Ala Tyr Ala Val Gly Asp Val Glu Lys Met Ala Leu  
                     450                      455                      460  
 Val Lys Leu Ala Lys Leu His Glu Gln Leu Thr Glu Ser Glu Gln Ala  
     465                      470                      475                      480  
 Ala Gln Cys Tyr Ile Lys Tyr Ile Gln Asp Ile Tyr Thr Cys Gly Glu  
                     485                      490                      495  
 Ile Val Glu His Leu Glu Glu Ser Thr Ala Phe Arg Tyr Leu Ala Gln  
                     500                      505                      510  
 Tyr Tyr Phe Lys Cys Lys Leu Trp Asp Glu Ala Ser Thr Cys Ala Gln  
                     515                      520                      525  
 Lys Cys Cys Ala Phe Asn Asp Thr Arg Glu Glu Gly Lys Ala Leu Leu  
                     530                      535                      540  
 Arg Gln Ile Leu Gln Leu Arg Asn Gln Gly Glu Thr Pro Thr Thr Glu  
     545                      550                      555                      560  
 Val Pro Ala Pro Phe Phe Leu Pro Ala Ser Leu Ser Ala Asn Asn Thr  
                     565                      570                      575  
 Pro Thr Arg Arg Val Ser Pro Leu Asn Leu Ser Ser Val Thr Pro  
                     580                      585                      590

<210> 29  
 <211> 2472  
 <212> DNA  
 <213> Homo sapiens

<400> 29  
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 ccaggggaag tagcaggctt gcaatcttca ggtaaagaag cagctttgaa tctgagcttc 240  
 atatcgaaag aagagatgaa aaataccagt tggattagaa agaactggct tcttgtagct 300  
 gggatatctt tcataggtgt ccatcttga acatactttt tgcagaggtc tgcaaagcag 360

tctgtaaaat ttcagtctca aagcaaaaca aagagtattg aagagtgaag taaaataaat 420  
 atttggaatt actaatttgt cattaaatca ttctatgctg attagcttca taaacattga 480  
 actttttgat tttatagcca caatgctgca tattcatact ttaattccta aagaataatt 540  
 tttaatgtta aaacgtgata atgcaataaa tagaaaaatg tggtttaca aataaaaacg 600  
 gtcttacta gttaccacct gaagtaagat gtctcgttg gaagctaaga agccatcatt 660  
 gtgtaagagt gaaccactga caactgagag agtcaggacc acactttctg tcttgaaaag 720  
 aattgtaaca tcatgctatg gcccctcagg taggctgaag cagctgcaca atggctttgg 780  
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 gacacccacc actgtcatta gattaaataa acatcttttg agtctttgca tcagtattct 1020  
 caagtctgat acctgtggtt gtcgaatccc agtggacttt agtagtactc agatcctcct 1080  
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 acctatcaaa aaatcaactg ccctcaaggt ggcactcttt tgtacaactt tatccggaga 1380  
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 cattctcaaa gatgatgaat gtactcaaac agaacttcaa ttaattgctg aagcattttg 1980  
 cagtgcctta gaatctgtt tgggtctttt agaacatgat ggaggtgaaa ttctcactga 2040  
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 agatttgctt tcacagtgtg gctgtggatt atacaatagc caggaagaac tcaactggtc 2160  
 tttcttaaga agcacacgtc gtccatttgt gccacaaagc tgccttccac atgaagctgt 2220  
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 ggctgtagag acagccaatt tgatttggga tctttcatat gttattgaag ataaaaacta 2340  
 agagaatagc atgttcgtat tacaagagaa acaataaaac tagtctgttg gcaattgaga 2400  
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 aaaaaaaaaa aa 2472

&lt;210&gt; 30

&lt;211&gt; 570

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 30

Met Ser Arg Leu Glu Ala Lys Lys Pro Ser Leu Cys Lys Ser Glu Pro  
 1 5 10 15

Leu Thr Thr Glu Arg Val Arg Thr Thr Leu Ser Val Leu Lys Arg Ile  
 20 25 30

Val Thr Ser Cys Tyr Gly Pro Ser Gly Arg Leu Lys Gln Leu His Asn  
 35 40 45

Gly Phe Gly Gly Tyr Val Cys Thr Thr Ser Gln Ser Ser Ala Leu Leu  
 50 55 60

Ser His Leu Leu Val Thr His Pro Ile Leu Lys Ile Leu Thr Ala Ser  
 65 70 75 80

Ile Gln Asn His Val Ser Ser Phe Ser Asp Cys Gly Leu Phe Thr Ala  
 85 90 95

Ile Leu Cys Cys Asn Leu Ile Glu Asn Val Gln Arg Leu Gly Leu Thr  
 100 105 110  
 Pro Thr Thr Val Ile Arg Leu Asn Lys His Leu Leu Ser Leu Cys Ile  
 115 120 125  
 Ser Tyr Leu Lys Ser Asp Thr Cys Gly Cys Arg Ile Pro Val Asp Phe  
 130 135 140  
 Ser Ser Thr Gln Ile Leu Leu Cys Leu Val Arg Ser Ile Leu Thr Ser  
 145 150 155 160  
 Lys Pro Ala Cys Met Leu Thr Arg Lys Glu Thr Glu His Val Ser Ala  
 165 170 175  
 Leu Ile Leu Arg Ala Phe Leu Leu Thr Ile Pro Glu Asn Ala Glu Gly  
 180 185 190  
 His Ile Ile Leu Gly Lys Ser Leu Ile Val Pro Leu Lys Gly Gln Arg  
 195 200 205  
 Val Ile Asp Ser Thr Val Leu Pro Gly Ile Leu Ile Glu Met Ser Glu  
 210 215 220  
 Val Gln Leu Met Arg Leu Leu Pro Ile Lys Lys Ser Thr Ala Leu Lys  
 225 230 235 240  
 Val Ala Leu Phe Cys Thr Thr Leu Ser Gly Asp Thr Ser Asp Thr Gly  
 245 250 255  
 Glu Gly Thr Val Val Val Ser Tyr Gly Val Ser Leu Glu Asn Ala Val  
 260 265 270  
 Leu Asp Gln Leu Leu Asn Leu Gly Arg Gln Leu Ile Ser Asp His Val  
 275 280 285  
 Asp Leu Val Leu Cys Gln Lys Val Ile His Pro Ser Leu Lys Gln Phe  
 290 295 300  
 Leu Asn Met His Arg Ile Ile Ala Ile Asp Arg Ile Gly Val Thr Leu  
 305 310 315 320  
 Met Glu Pro Leu Thr Lys Met Thr Gly Thr Gln Pro Ile Gly Ser Leu  
 325 330 335  
 Gly Ser Ile Cys Pro Asn Ser Tyr Gly Ser Val Lys Asp Val Cys Thr  
 340 345 350  
 Ala Lys Phe Gly Ser Gln His Phe Phe His Leu Ile Pro Asn Glu Ala  
 355 360 365  
 Thr Ile Cys Ser Leu Leu Leu Cys Asn Arg Asn Asp Thr Ala Trp Asp  
 370 375 380  
 Glu Leu Lys Leu Thr Cys Gln Thr Ala Leu His Val Leu Gln Leu Thr  
 385 390 395 400  
 Leu Lys Glu Pro Trp Ala Leu Leu Gly Gly Gly Cys Thr Glu Thr His  
 405 410 415

Leu Ala Ala Tyr Ile Arg His Lys Thr His Asn Asp Pro Glu Ser Ile  
 420 425 430  
 Leu Lys Asp Asp Glu Cys Thr Gln Thr Glu Leu Gln Leu Ile Ala Glu  
 435 440 445  
 Ala Phe Cys Ser Ala Leu Glu Ser Val Val Gly Ser Leu Glu His Asp  
 450 455 460  
 Gly Gly Glu Ile Leu Thr Asp Met Lys Tyr Gly His Leu Trp Ser Val  
 465 470 475 480  
 Gln Ala Asp Ser Pro Cys Val Ala Asn Trp Pro Asp Leu Leu Ser Gln  
 485 490 495  
 Cys Gly Cys Gly Leu Tyr Asn Ser Gln Glu Glu Leu Asn Trp Ser Phe  
 500 505 510  
 Leu Arg Ser Thr Arg Arg Pro Phe Val Pro Gln Ser Cys Leu Pro His  
 515 520 525  
 Glu Ala Val Gly Ser Ala Ser Asn Leu Thr Leu Asp Cys Leu Thr Ala  
 530 535 540  
 Lys Leu Ser Gly Leu Gln Val Ala Val Glu Thr Ala Asn Leu Ile Trp  
 545 550 555 560  
 Asp Leu Ser Tyr Val Ile Glu Asp Lys Asn  
 565 570

&lt;210&gt; 31

&lt;211&gt; 1527

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 31

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 agaaaacatc cagggcggag gctcagctgt gattgacatg gagaacatgg atgataacctc 180  
 aggtcttagc ttcgaggata tgggtgagct gcatcagcgc ctgcgcgagg aagaagtaga 240  
 cgctgatgca gctgatgcag ctgctgctga agaggaggat ggagagtcc tgggcatgaa 300  
 gggctttaag ggacagctga gccggcaggt ggcagatcag atgtggcagg ctgggaaaag 360  
 acaagcctcc agggccttca gcttgtagc caacatcgac atcctcagac cctactttga 420  
 tgtggagcct gctcaggtgc gaagcaggct cctggagtcc atgateccta tcaagatgg 480  
 caacttcccc cagaaaattg cagggtgaact ctatggacct ctcatgctgg tcttactct 540  
 gggtgctatc ctactccatg ggatgaagac gtctgacact attatccggg agggcaccct 600  
 gatgggcaca gccattggca cctgcttcgg ctactggctg ggagtctcat ccttcattta 660  
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 ctatggcttc tttgggcatt gcattgtcct gttcatcacc tataatatcc acctccacgc 780  
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 ctccacacatt gtcttgctta aatatagaac ttggtcttaa aaaaaaaaaa aaaaaaaaaa 1440  
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 aaaaaaaaaa aaaaaaaaaa aaaaaaa 1527

<210> 32

<211> 315

<212> PRT

<213> Homo sapiens

<400> 32

Met Glu Asn Met Asp Asp Thr Ser Gly Ser Ser Phe Glu Asp Met Gly  
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Glu Leu His Gln Arg Leu Arg Glu Glu Glu Val Asp Ala Asp Ala Ala  
 20 25 30

Asp Ala Ala Ala Ala Glu Glu Glu Asp Gly Glu Phe Leu Gly Met Lys  
 35 40 45

Gly Phe Lys Gly Gln Leu Ser Arg Gln Val Ala Asp Gln Met Trp Gln  
 50 55 60

Ala Gly Lys Arg Gln Ala Ser Arg Ala Phe Ser Leu Tyr Ala Asn Ile  
 65 70 75 80

Asp Ile Leu Arg Pro Tyr Phe Asp Val Glu Pro Ala Gln Val Arg Ser  
 85 90 95

Arg Leu Leu Glu Ser Met Ile Pro Ile Lys Met Val Asn Phe Pro Gln  
 100 105 110

Lys Ile Ala Gly Glu Leu Tyr Gly Pro Leu Met Leu Val Phe Thr Leu  
 115 120 125

Val Ala Ile Leu Leu His Gly Met Lys Thr Ser Asp Thr Ile Ile Arg  
 130 135 140

Glu Gly Thr Leu Met Gly Thr Ala Ile Gly Thr Cys Phe Gly Tyr Trp  
 145 150 155 160

Leu Gly Val Ser Ser Phe Ile Tyr Phe Leu Ala Tyr Leu Cys Asn Ala  
 165 170 175

Gln Ile Thr Met Leu Gln Met Leu Ala Leu Leu Gly Tyr Gly Leu Phe  
 180 185 190

Gly His Cys Ile Val Leu Phe Ile Thr Tyr Asn Ile His Leu His Ala  
 195 200 205

Leu Phe Tyr Leu Phe Trp Arg Leu Val Gly Gly Leu Ser Thr Leu Arg  
 210 215 220

Met Val Ala Val Leu Val Ser Arg Thr Val Gly Pro Thr Gln Arg Leu  
 225 230 235 240

Leu Leu Cys Gly Thr Leu Ala Ala Leu His Met Leu Phe Leu Leu Tyr  
 245 250 255

Leu His Phe Ala Tyr His Lys Val Val Glu Gly Ile Leu Asp Thr Leu



260

265

270

Glu Gly Pro Asn Ile Pro Pro Ile Gln Arg Val Pro Arg Asp Ile Pro  
 275 280 285

Ala Met Leu Pro Ala Ala Arg Leu Pro Thr Thr Val Leu Asn Ala Thr  
 290 295 300

Ala Lys Ala Val Ala Val Thr Leu Gln Ser His  
 305 310 315

&lt;210&gt; 33

&lt;211&gt; 988

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 33

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 ggctagccat atacagaaaa atgaaactga acccgatatc ctactttat acaaaaatta 240  
 agttggatta aagacttaaa tgtaaaacct gatactataa aaattataga agaaaaccca 300  
 ggaaaagctc ttctggacac tggcctagga aaagaattta tgactaagtc atcaaaagca 360  
 tatgtaacaa aaaaaaaaaa aaagcgcccg ggtgaggggc ggagctgggg gcatggcgtc 420  
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 accgtcgagg tcagtcacgc ttaccgcgag cggcgccatt ttgcccaaac cggtgaaaat 600  
 gtccctcggc cttctccgtg tgttctccat tgtgatcccc tttctctatg tcgggacact 660  
 cattagcaag aactttgctg ctctacttga ggaacatgac atttttggtc cagaggatga 720  
 tgatgatgat gactaacagg aattacagaa aggagaaagc actaactgaa gaaatggtga 780  
 tgctctcagt ttctctgctc tccctatcag cagaaaggct cggggaaggc cctcagcctc 840  
 ccagtcgtgt gaagcttccg gtatgggtcca tgaccgtatt ccacccagc ctctggggagg 900  
 ctccctgaga tgtgctgtcc actaagcact gcacaaacaa gcaatcaaat tatgaataaa 960  
 cataataaat atcaaaaaaa aaaaaaaaaa 988

&lt;210&gt; 34

&lt;211&gt; 107

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 34

Met Ala Ser Gly Ala Ala Arg Trp Leu Val Leu Ala Pro Val Arg Ser  
 1 5 10 15  
 Gly Ala Leu Arg Ser Gly Pro Ser Leu Arg Lys Asp Gly Asp Val Ser  
 20 25 30  
 Ala Ala Trp Ser Gly Ser Gly Arg Ser Leu Val Pro Ser Arg Ser Val  
 35 40 45  
 Ile Val Thr Arg Ser Gly Ala Ile Leu Pro Lys Pro Val Lys Met Ser  
 50 55 60  
 Phe Gly Leu Leu Arg Val Phe Ser Ile Val Ile Pro Phe Leu Tyr Val  
 65 70 75 80  
 Gly Thr Leu Ile Ser Lys Asn Phe Ala Ala Leu Leu Glu Glu His Asp  
 85 90 95

Ile Phe Val Pro Glu Asp Asp Asp Asp Asp Asp  
100 105

<210> 35  
<211> 1759  
<212> DNA  
<213> Homo sapiens

<400> 35  
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 tattctacat ttttagtata aaaattccac aagttaagtg caccacagtg tagagagaga 120  
 catacaacgc tgaacttcca taacagtcaa tggtagagtc aaacatcaca tgtacagAAC 180  
 acacaattta gatgaactga aattataaga taaaataaaa taaaatccaa tttcagaaaa 240  
 caaaaatcaa aacattaagg atccctgaaa tattcttaaa ccctaagtga atttactgg 300  
 actcaagtca tttttagtg agacattcac aatatgacct tatcaacca gtctaggaat 360  
 tctggggagc cgaatgagtg gccgcatcag acactctgac aaaaaatggg aaccaatttt 420  
 tgatctgaaa actcctctta atttagctct gaacaagag atttatccaa gtgccagatt 480  
 actcagtgtc ataattttct tttagttaaa caaagggggt cagacagaca tggcatcctc 540  
 cagacatgcc ttgttgagca tgtagaatcc gatggagcac tgcacaccag aatgattggc 600  
 caatgagcag ctctctctcc tgaacaata actgcccatt tggcaaaggg aaagatgaca 660  
 ataacagaa gaagaaatg aatgggatgc ataccataga cgaacgaggc ggagactatt 720  
 gcgggaatct tactgttcag gagctgttcc tagaactaac tcccttactg tcattgatgt 780  
 gcattccact ctgtgctttt ctgtacaacc attcaagttt taatttccca ggtgaaccat 840  
 ctttatctgc cattaccaca agctttcaag tttccagtta ttttcatcat cataaccagt 900  
 acgggtgctat tatttaccta tgtacgtgta gttatgtata attttgtaat tagttacaat 960  
 ggtaaaaaaa atcgaaatat ataaaaagtg atttgtacag aactttattt tagctctttt 1020  
 ttaaaaatga tttgcatggt tagaaaaagg cgaggacagc caggggaggg aagggcctct 1080  
 agggaaactt gcactttcta taacctttgt acttatgcca ctgccctatt tgattctaca 1140  
 cccaataatg attattactt gaaacccatc tgtaagaaac tgcttcggaa attcatttgt 1200  
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 ctaattagta gtacgcgtaa atgttttaca gaatgaaagg cgtgcttttt attttcttac 1620  
 ttcgttacat tgggtggcga agaagtctgt atgaaatca gttctttgct gacacaagtt 1680  
 ccatttgtaa caaatgaatt ctaataaaaa tgtcagtggt aaaaaaaaaa aaaaaaaaaa 1740  
 aaaaaaaaaa aaaaaaaaaa 1759

<210> 36  
<211> 87  
<212> PRT  
<213> Homo sapiens

<400> 36  
 Met Asn Gly Met His Thr Ile Asp Glu Arg Gly Gly Asp Tyr Cys Gly  
 1 5 10 15  
 Asn Leu Thr Val Gln Glu Leu Phe Leu Glu Leu Thr Pro Leu Leu Ser  
 20 25 30  
 Leu Met Cys Ile Pro Leu Cys Ala Phe Leu Tyr Asn His Ser Ser Phe  
 35 40 45  
 Asn Phe Pro Gly Glu Pro Ser Leu Ser Ala Ile Thr Thr Ser Phe Gln  
 50 55 60  
 Val Ser Ser Tyr Phe His His His Asn Gln Tyr Gly Ala Ile Ile Tyr

65 70 75 80

Leu Cys Thr Cys Ser Tyr Val  
85

<210> 37  
<211> 643  
<212> DNA  
<213> Homo sapiens

<400> 37  
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aggcgcccgagg ggacacttgg tttctccagg gctggaaggc ttctagaagg ttcctcatca 180  
aggggaagtgt ggctgggggc gccgtctacc tgggtgtacga ccaggagctg ctggggccca 240  
gcgacaagag ccaggcagcc ctacagaagg ctggggaggt ggtccccccc gccatgtacc 300  
agttagacca gtacgtgtgt cagcagacag gcctgcagat accccagctc ccagcccctc 360  
caaagattta ctttcccatc cgtgactcct ggaatgcagg catcatgacg gtgatgtcag 420  
ctctgtcggg ggccccctcc aaggcccgcg agtactccaa ggagggctgg gagtatgtga 480  
aggcgcgcac caagtgcga gtcagcaggg gccgcctgcc ccggccagaa cgggcagggc 540  
tgccactgac ctgaagactc cggactggga cccactccg agggcagctc ccggccttgc 600  
cggccaata aaggacttca gaagtgaata aaaaaaaaaa aaa 643

<210> 38  
<211> 140  
<212> PRT  
<213> Homo sapiens

<400> 38  
Met Arg Ser Glu Cys Val Leu Gly Ala Ala Ser Asp Ser Gly Gln Glu  
1 5 10 15  
Ala Pro Arg Asp Thr Trp Phe Leu Gln Gly Trp Lys Ala Ser Arg Arg  
20 25 30  
Phe Leu Ile Lys Gly Ser Val Ala Gly Gly Ala Val Tyr Leu Val Tyr  
35 40 45  
Asp Gln Glu Leu Leu Gly Pro Ser Asp Lys Ser Gln Ala Ala Leu Gln  
50 55 60  
Lys Ala Gly Glu Val Val Pro Pro Ala Met Tyr Gln Phe Ser Gln Tyr  
65 70 75 80  
Val Cys Gln Gln Thr Gly Leu Gln Ile Pro Gln Leu Pro Ala Pro Pro  
85 90 95  
Lys Ile Tyr Phe Pro Ile Arg Asp Ser Trp Asn Ala Gly Ile Met Thr  
100 105 110  
Val Met Ser Ala Leu Ser Val Ala Pro Ser Lys Ala Arg Glu Tyr Ser  
115 120 125  
Lys Glu Gly Trp Glu Tyr Val Lys Ala Arg Thr Lys  
130 135 140

<210> 39  
<211> 2015

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 39

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&lt;210&gt; 40

&lt;211&gt; 300

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 40

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Phe Phe Cys Pro Asn Glu Glu Ala Cys Pro Leu Lys Pro Ala Lys Gly
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Leu Met Ser Tyr Arg Ile Ile Thr Asp Phe Pro Ser Leu Thr Arg Asn
      35                      40                      45

Leu Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His Gly Gln
      50                      55                      60

Phe Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp Tyr Ser
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 100 105 110  
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 115 120 125  
 Ser Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val Ser Ala  
 130 135 140  
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 145 150 155 160  
 Pro Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr Pro Ser  
 165 170 175  
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 180 185 190  
 Val Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr Val Phe Thr Arg  
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 <211> 1549  
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 <213> Homo sapiens

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&lt;210&gt; 42

&lt;211&gt; 396

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 42

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 Leu Gln Leu Ile Arg Ile Pro Leu Val Pro Pro Leu Pro Pro Leu Leu  
 35 40 45  
 Gly Met Leu Leu Ala Gly Phe Thr Ile Arg Asn Val Pro Phe Ile Asn  
 50 55 60  
 Glu His Val His Val Pro Asn Thr Trp Ser Ser Ile Leu Arg Ser Ile  
 65 70 75 80  
 Ala Leu Thr Ile Ile Leu Ile Arg Ala Gly Leu Gly Leu Asp Pro Gln  
 85 90 95  
 Ala Leu Arg His Leu Lys Val Val Cys Phe Arg Leu Ala Val Gly Pro  
 100 105 110  
 Cys Leu Met Glu Ala Ser Ala Ala Ala Val Phe Ser His Phe Ile Met  
 115 120 125  
 Lys Phe Pro Trp Gln Trp Ala Phe Leu Leu Gly Phe Val Leu Gly Ala  
 130 135 140  
 Val Ser Pro Ala Val Val Val Pro Tyr Met Met Val Leu Gln Glu Asn  
 145 150 155 160  
 Gly Tyr Gly Val Glu Glu Gly Ile Pro Thr Leu Leu Met Ala Ala Ser  
 165 170 175  
 Ser Met Asp Asp Ile Leu Ala Ile Thr Gly Phe Asn Thr Cys Leu Ser  
 180 185 190  
 Ile Val Phe Ser Ser Gly Gly Ile Leu Asn Asn Ala Ile Ala Ser Ile  
 195 200 205

Arg Asn Val Cys Ile Ser Leu Leu Ala Gly Ile Val Leu Gly Phe Phe  
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 Val Arg Tyr Phe Pro Ser Glu Asp Gln Lys Lys Leu Thr Leu Lys Arg  
 225 230 235 240  
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 245 250 255  
 Arg Ile Gly Leu His Gly Ser Gly Gly Leu Cys Thr Leu Val Leu Ser  
 260 265 270  
 Phe Ile Ala Gly Thr Lys Trp Ser Gln Glu Lys Met Lys Val Gln Lys  
 275 280 285  
 Ile Ile Thr Thr Val Trp Asp Ile Phe Gln Pro Leu Leu Phe Gly Leu  
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 305 310 315 320  
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 325 330 335  
 Thr Tyr Leu Leu Met Cys Phe Ala Gly Phe Ser Phe Lys Glu Lys Ile  
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&lt;211&gt; 439

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 44

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Ser Leu Leu Gly Ser Ala Ala Glu Pro Ala Arg Gly Pro Pro Pro Gln  
 35 40 45

His Pro Leu Gln Gly Arg Lys Glu Lys Arg Val Asp Asn Ile Glu Ile  
 50 55 60

Gln Lys Phe Ile Ser Lys Lys Ala Asp Leu Leu Phe Ala Leu Ser Trp  
 65 70 75 80

Lys Ser Asp Ala Pro Ala Thr Ser Glu Ile Asn Glu Asp Ser Glu Asp  
 85 90 95

His Tyr Ala Ile Met Pro Pro Leu Glu Gln Phe Met Glu Ile Pro Ser  
 100 105 110

Met Asp Arg Arg Glu Leu Phe Phe Arg Asp Ile Glu Arg Gly Asp Ile  
 115 120 125

Val Ile Gly Arg Ile Ser Ser Ile Arg Glu Phe Gly Phe Phe Met Val  
 130 135 140

Leu Ile Cys Leu Gly Ser Gly Ile Met Arg Asp Ile Ala His Leu Glu  
 145 150 155 160

Ile Thr Ala Leu Cys Pro Leu Arg Asp Val Pro Ser His Ser Asn His  
 165 170 175

Gly Asp Pro Leu Ser Tyr Tyr Gln Thr Gly Asp Ile Ile Arg Ala Gly  
 180 185 190

Ile Lys Asp Ile Asp Arg Tyr His Glu Lys Leu Ala Val Ser Leu Tyr  
 195 200 205

Ser Ser Ser Leu Pro Pro His Leu Ser Gly Ile Lys Leu Gly Val Ile  
 210 215 220

Ser Ser Glu Glu Leu Pro Leu Tyr Tyr Arg Arg Ser Val Glu Leu Asn  
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Ser Asn Ser Leu Glu Ser Tyr Glu Asn Val Met Gln Ser Ser Leu Gly  
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Phe Val Asn Pro Gly Val Val Glu Phe Leu Leu Glu Lys Leu Gly Ile  
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Asp Glu Ser Asn Pro Pro Ser Leu Met Arg Gly Leu Gln Ser Lys Asn  
 275 280 285

Phe Ser Glu Asp Asp Phe Ala Ser Ala Leu Arg Lys Lys Gln Ser Ala

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 305                      310                      315                      320  
 Gly Arg His Val Asp Ala Met Asn Glu Tyr Asn Lys Ala Leu Glu Ile  
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 Asp Lys Gln Asn Val Glu Ala Leu Val Ala Arg Gly Ala Leu Tyr Ala  
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 Thr Lys Gly Ser Leu Asn Lys Ala Ile Glu Asp Phe Glu Leu Ala Leu  
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 Leu Val Glu Arg Gly Gly Gln Leu Glu Glu Glu Glu Lys Phe Leu Asn  
 385                      390                      395                      400  
 Ala Glu Ser Tyr Tyr Lys Lys Ala Leu Ala Leu Asp Glu Thr Phe Lys  
                          405                      410                      415  
 Asp Ala Glu Asp Ala Leu Gln Lys Leu His Lys Tyr Met Gln Val Ile  
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 Pro Tyr Phe Leu Leu Glu Ile  
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&lt;210&gt; 45

&lt;211&gt; 4017

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 45

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&lt;210&gt; 46

&lt;211&gt; 1152

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 46

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Arg Ile Val Pro Gly Gln Phe Leu Ala Val Asp Pro Lys Gly Arg Ala

50

55

60

Val Met Ile Ser Ala Ile Glu Lys Gln Lys Leu Val Tyr Ile Leu Asn  
 65 70 75 80  
 Arg Asp Ala Ala Ala Arg Leu Thr Ile Ser Ser Pro Leu Glu Ala His  
 85 90 95  
 Lys Ala Asn Thr Leu Val Tyr His Val Val Gly Val Asp Val Gly Phe  
 100 105 110  
 Glu Asn Pro Met Phe Ala Cys Leu Glu Met Asp Tyr Glu Glu Ala Asp  
 115 120 125  
 Asn Asp Pro Thr Gly Glu Ala Ala Ala Asn Thr Gln Gln Thr Leu Thr  
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 Phe Tyr Glu Leu Asp Leu Gly Leu Asn His Val Val Arg Lys Tyr Ser  
 145 150 155 160  
 Glu Pro Leu Glu Glu His Gly Asn Phe Leu Ile Thr Val Pro Gly Gly  
 165 170 175  
 Ser Asp Gly Pro Ser Gly Val Leu Ile Cys Ser Glu Asn Tyr Ile Thr  
 180 185 190  
 Tyr Lys Asn Phe Gly Asp Gln Pro Asp Ile Arg Cys Pro Ile Pro Arg  
 195 200 205  
 Arg Arg Asn Asp Leu Asp Asp Pro Glu Arg Gly Met Ile Phe Val Cys  
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 Glu Gln Gly Asp Ile Phe Lys Ile Thr Leu Glu Thr Asp Glu Asp Met  
 245 250 255  
 Val Thr Glu Ile Arg Leu Lys Tyr Phe Asp Thr Val Pro Val Ala Ala  
 260 265 270  
 Ala Met Cys Val Leu Lys Thr Gly Phe Leu Phe Val Ala Ser Glu Phe  
 275 280 285  
 Gly Asn His Tyr Leu Tyr Gln Ile Ala His Leu Gly Asp Asp Asp Glu  
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 Glu Pro Glu Phe Ser Ser Ala Met Pro Leu Glu Glu Gly Asp Thr Phe  
 305 310 315 320  
 Phe Phe Gln Pro Arg Pro Leu Lys Asn Leu Val Leu Val Asp Glu Leu  
 325 330 335  
 Asp Ser Leu Ser Pro Ile Leu Phe Cys Gln Ile Ala Asp Leu Ala Asn  
 340 345 350  
 Glu Asp Thr Pro Gln Leu Tyr Val Ala Cys Gly Arg Gly Pro Arg Ser  
 355 360 365  
 Ser Leu Arg Val Leu Arg His Gly Leu Glu Val Ser Glu Met Ala Val

370                      375                      380  
 Ser Glu Leu Pro Gly Asn Pro Asn Ala Val Trp Thr Val Arg Arg His  
 385                      390                      395                      400  
 Ile Glu Asp Glu Phe Asp Ala Tyr Ile Ile Val Ser Phe Val Asn Ala  
                     405                      410                      415  
 Thr Leu Val Leu Ser Ile Gly Glu Thr Val Glu Glu Val Thr Asp Ser  
                     420                      425                      430  
 Gly Phe Leu Gly Thr Thr Pro Thr Leu Ser Cys Ser Leu Leu Gly Asp  
                     435                      440                      445  
 Asp Ala Leu Val Gln Val Tyr Pro Asp Gly Ile Arg His Ile Arg Ala  
                     450                      455                      460  
 Asp Lys Arg Val Asn Glu Trp Lys Thr Pro Gly Lys Lys Thr Ile Val  
 465                      470                      475                      480  
 Lys Cys Ala Val Asn Gln Arg Gln Val Val Ile Ala Leu Thr Gly Gly  
                     485                      490                      495  
 Glu Leu Val Tyr Phe Glu Met Asp Pro Ser Gly Gln Leu Asn Glu Tyr  
                     500                      505                      510  
 Thr Glu Arg Lys Glu Met Ser Ala Asp Val Val Cys Met Ser Leu Ala  
                     515                      520                      525  
 Asn Val Pro Pro Gly Glu Gln Arg Ser Arg Phe Leu Ala Val Gly Leu  
                     530                      535                      540  
 Val Asp Asn Thr Val Arg Ile Ile Ser Leu Asp Pro Ser Asp Cys Leu  
 545                      550                      555                      560  
 Gln Pro Leu Ser Met Gln Ala Leu Pro Ala Gln Pro Glu Ser Leu Cys  
                     565                      570                      575  
 Ile Val Glu Met Gly Gly Thr Glu Lys Gln Asp Glu Leu Gly Glu Arg  
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 Gly Ser Ile Gly Phe Leu Tyr Leu Asn Ile Gly Leu Gln Asn Gly Val  
                     595                      600                      605  
 Leu Leu Arg Thr Val Leu Asp Pro Val Thr Gly Asp Leu Ser Asp Thr  
                     610                      615                      620  
 Arg Thr Arg Tyr Leu Gly Ser Arg Pro Val Lys Leu Phe Arg Val Arg  
 625                      630                      635                      640  
 Met Gln Gly Gln Glu Ala Val Leu Ala Met Ser Ser Arg Ser Trp Leu  
                     645                      650                      655  
 Ser Tyr Ser Tyr Gln Ser Arg Phe His Leu Thr Pro Leu Ser Tyr Glu  
                     660                      665                      670  
 Thr Leu Glu Phe Ala Ser Gly Phe Ala Ser Glu Gln Cys Pro Glu Gly  
                     675                      680                      685  
 Ile Val Ala Ile Ser Thr Asn Thr Leu Arg Ile Leu Ala Leu Glu Lys

690	695	700
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705	710	715 720
Arg Lys Phe Val Ile His Pro Glu Ser Asn Asn Leu Ile Ile Ile Glu		
	725	730 735
Thr Asp His Asn Ala Tyr Thr Glu Ala Thr Lys Ala Gln Arg Lys Gln		
	740	745 750
Gln Met Ala Glu Glu Met Val Glu Ala Ala Gly Glu Asp Glu Arg Glu		
	755	760 765
Leu Ala Ala Glu Met Ala Ala Ala Phe Leu Asn Glu Asn Leu Pro Glu		
	770	775 780
Ser Ile Phe Gly Ala Pro Lys Ala Gly Asn Gly Gln Trp Ala Ser Val		
785	790	795 800
Ile Arg Val Met Asn Pro Ile Gln Gly Asn Thr Leu Asp Leu Val Gln		
	805	810 815
Leu Glu Gln Asn Glu Ala Ala Phe Ser Val Ala Val Cys Arg Phe Ser		
	820	825 830
Asn Thr Gly Glu Asp Trp Tyr Val Leu Val Gly Val Ala Lys Asp Leu		
	835	840 845
Ile Leu Asn Pro Arg Ser Val Ala Gly Gly Phe Val Tyr Thr Tyr Lys		
	850	855 860
Leu Val Asn Asn Gly Glu Lys Leu Glu Phe Leu His Lys Thr Pro Val		
865	870	875 880
Glu Glu Val Pro Ala Ala Ile Ala Pro Phe Gln Gly Arg Val Leu Ile		
	885	890 895
Gly Val Gly Lys Leu Leu Arg Val Tyr Asp Leu Gly Lys Lys Lys Leu		
	900	905 910
Leu Arg Lys Cys Glu Asn Lys His Ile Ala Asn Tyr Ile Ser Gly Ile		
	915	920 925
Gln Thr Ile Gly His Arg Val Ile Val Ser Asp Val Gln Glu Ser Phe		
	930	935 940
Ile Trp Val Arg Tyr Lys Arg Asn Glu Asn Gln Leu Ile Ile Phe Ala		
945	950	955 960
Asp Asp Thr Tyr Pro Arg Trp Val Thr Thr Ala Ser Leu Leu Asp Tyr		
	965	970 975
Asp Thr Val Ala Gly Ala Asp Lys Phe Gly Asn Ile Cys Val Val Arg		
	980	985 990
Leu Pro Pro Asn Thr Asn Asp Glu Val Asp Glu Asp Pro Thr Gly Asn		
	995	1000 1005
Lys Ala Leu Trp Asp Arg Gly Leu Leu Asn Gly Ala Ser Gln Lys Ala		

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 1025                      1030                      1035                      1040  
 Lys Thr Thr Leu Ile Pro Gly Gly Ser Glu Ser Leu Val Tyr Thr Thr  
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 Leu Ser Gly Gly Ile Gly Ile Leu Val Pro Phe Thr Ser His Glu Asp  
                     1060                      1065                      1070  
 His Asp Phe Phe Gln His Val Glu Met His Leu Arg Ser Glu His Pro  
                     1075                      1080                      1085  
 Pro Leu Cys Gly Arg Asp His Leu Ser Phe Arg Ser Tyr Tyr Phe Pro  
                     1090                      1095                      1100  
 Val Lys Asn Val Ile Asp Gly Asp Leu Cys Glu Gln Phe Asn Ser Met  
 1105                      1110                      1115                      1120  
 Glu Pro Asn Lys Gln Lys Asn Val Ser Glu Glu Leu Asp Arg Thr Pro  
                     1125                      1130                      1135  
 Pro Glu Val Ser Lys Lys Leu Glu Asp Ile Arg Thr Arg Tyr Ala Phe  
                     1140                      1145                      1150

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 <211> 2635  
 <212> DNA  
 <213> Homo sapiens

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 ttgctgtggt tgttgattag ttccatctct tccccatttt aactgagaat tgattatata 240  
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 gattttccag catattgctt taaaaaatta tataaactgt taaaatatta acacctcagg 720  
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 aaatgtttct tacaatgtca ataaaaaatt ctttgtatgg aaaaaaaaaa aaaaa 2635

&lt;210&gt; 48

&lt;211&gt; 97

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 48

Met His Ser Asp Pro Ala His His Cys Cys Cys Leu Val Leu Leu Leu  
 1 5 10 15

Phe Pro Met Val Ser Gly Tyr Phe Leu Gly Phe Pro Tyr Ser Ser Phe  
 20 25 30

Ile Ser Phe Phe Phe Ile Phe Ala Phe Leu Ser Thr Ala Phe Arg Phe  
 35 40 45

Ala Gly Asp Ala Ser Phe Ser Ser Met Phe Gly Phe Ser Gln Tyr Gly  
 50 55 60

Asn Phe Arg Arg Thr Glu Glu Arg Arg Glu Glu Glu Glu Ser Ile Leu  
 65 70 75 80

Leu Gln Asn Phe Ser Asp Leu Leu Trp Gln Ser Ser Gly Arg Lys Val  
 85 90 95

Phe

&lt;210&gt; 49

&lt;211&gt; 1594

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 49

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 gtggccacag cctgctggt ggctttacta tttactttga ttcacccaag aagaagcagc 240  
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 gaggccaca tatatgtgaa gactgtagca ggaagcgagg aacctgtgca tgaccgttac 420  
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aaaacaacac tttgtcttta aaaaaaaaaa aaaa 1594

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&lt;210&gt; 50

&lt;211&gt; 141

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 50

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Met Ser Phe Ser Leu Asn Phe Thr Leu Pro Ala Asn Thr Thr Ser Ser
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Pro Val Thr Gly Gly Lys Glu Thr Asp Cys Gly Pro Ser Leu Gly Leu
      20              25              30

Ala Ala Gly Ile Pro Leu Leu Val Ala Thr Ala Leu Leu Val Ala Leu
      35              40              45

Leu Phe Thr Leu Ile His Pro Arg Arg Ser Ser Ile Glu Ala Met Glu
      50              55              60

Glu Ser Asp Arg Pro Cys Glu Ile Ser Glu Ile Asp Asp Asn Pro Lys
      65              70              75              80

Ile Ser Glu Asn Pro Arg Arg Ser Pro Thr His Glu Lys Asn Thr Met
      85              90              95

Gly Ala Gln Glu Ala His Ile Tyr Val Lys Thr Val Ala Gly Ser Glu
      100             105             110

Glu Pro Val His Asp Arg Tyr Arg Pro Thr Ile Glu Met Glu Arg Arg
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Arg Gly Leu Trp Trp Leu Val Pro Arg Leu Ser Leu Glu
      130             135             140

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&lt;210&gt; 51

&lt;211&gt; 5160

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 51

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&lt;210&gt; 52

&lt;211&gt; 1135

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 52

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Leu Pro Thr Glu His Leu Gln Leu Phe His Ile Glu Val Glu Val Leu  
115 120 125  
Asp Ile Asn Asp Asn Ser Pro Gln Phe Ser Arg Ser Leu Ile Pro Ile  
130 135 140

Glu Ile Ser Glu Ser Ala Ala Val Gly Thr Arg Ile Pro Leu Asp Ser  
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 Ala Phe Asp Pro Asp Val Gly Glu Asn Ser Leu His Thr Tyr Ser Leu  
 165 170 175  
 Ser Ala Asn Asp Phe Phe Asn Ile Glu Val Arg Thr Arg Thr Asp Gly  
 180 185 190  
 Ala Lys Tyr Ala Glu Leu Ile Val Val Arg Glu Leu Asp Arg Glu Leu  
 195 200 205  
 Lys Ser Ser Tyr Glu Leu Gln Leu Thr Ala Ser Asp Met Gly Val Pro  
 210 215 220  
 Gln Arg Ser Gly Ser Ser Ile Leu Lys Ile Ser Ile Ser Asp Ser Asn  
 225 230 235 240  
 Asp Asn Ser Pro Ala Phe Glu Gln Gln Ser Tyr Ile Ile Gln Leu Leu  
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 260 265 270  
 Pro Asp Glu Gly Ala Asn Gly Lys Ile Val Tyr Ser Phe Ser Ser His  
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 Val Ser Pro Lys Ile Met Glu Thr Phe Lys Ile Asp Ser Glu Arg Gly  
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 His Cys Lys Ile Ile Ile Lys Val Val Asp Val Asn Asp Asn Lys Pro  
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 Ile Phe Glu Gly Asp Pro Ile Asp Thr Phe Val Ala Leu Val Arg Val  
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 Gly His Gly His Phe Lys Leu Gln Lys Thr Tyr Glu Asn Asn Tyr Leu  
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 420 425 430  
 Leu Thr Val Ile Ala Glu Asp Arg Gly Thr Pro Ser Leu Ser Thr Val  
 435 440 445  
 Lys His Phe Thr Val Gln Ile Asn Asp Ile Asn Asp Asn Pro Pro His  
 450 455 460

Phe Gln Arg Ser Arg Tyr Glu Phe Val Ile Ser Glu Asn Asn Ser Pro  
 465 470 475 480  
 Gly Ala Tyr Ile Thr Thr Val Thr Ala Thr Asp Pro Asp Leu Gly Glu  
 485 490 495  
 Asn Gly Gln Val Thr Tyr Thr Ile Leu Glu Ser Phe Ile Leu Gly Ser  
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 Ser Ile Thr Thr Tyr Val Thr Ile Asp Pro Ser Asn Gly Ala Ile Tyr  
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 Ala Leu Arg Ile Phe Asp His Glu Glu Val Ser Gln Ile Thr Phe Val  
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 Val Glu Ala Arg Asp Gly Gly Ser Pro Lys Gln Leu Val Ser Asn Thr  
 545 550 555 560  
 Thr Val Val Leu Thr Ile Ile Asp Glu Asn Asp Asn Val Pro Val Val  
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 675 680 685  
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 740 745 750  
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 755 760 765  
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 770 775 780

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 850 855 860  
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 Asp Gln Cys Trp Met Pro Pro Leu Pro Ser Pro Ser Ser Asp Tyr Arg  
 930 935 940  
 Ser Asn Met Phe Ile Pro Gly Glu Glu Phe Pro Thr Gln Pro Gln Gln  
 945 950 955 960  
 Gln His Pro His Gln Ser Leu Glu Asp Asp Ala Gln Pro Ala Asp Ser  
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 Gly Glu Lys Lys Lys Ser Phe Ser Thr Phe Gly Lys Asp Ser Pro Asn  
 980 985 990  
 Asp Glu Asp Thr Gly Asp Thr Ser Thr Ser Ser Leu Leu Ser Glu Met  
 995 1000 1005  
 Ser Ser Val Phe Gln Arg Leu Leu Pro Pro Ser Leu Asp Thr Tyr Ser  
 1010 1015 1020  
 Glu Cys Ser Glu Val Asp Arg Ser Asn Ser Leu Glu Arg Arg Lys Gly  
 1025 1030 1035 1040  
 Pro Leu Pro Ala Lys Thr Val Gly Tyr Pro Gln Gly Val Ala Ala Trp  
 1045 1050 1055  
 Ala Ala Ser Thr His Phe Gln Asn Pro Thr Thr Asn Cys Gly Pro Pro  
 1060 1065 1070  
 Leu Gly Thr His Ser Ser Val Gln Pro Ser Ser Lys Trp Leu Pro Ala  
 1075 1080 1085  
 Met Glu Glu Ile Pro Glu Asn Tyr Glu Glu Asp Asp Phe Asp Asn Val  
 1090 1095 1100

Leu Asn His Leu Asn Asp Gly Lys His Glu Leu Met Asp Ala Ser Glu  
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Leu Val Ala Glu Ile Asn Lys Leu Leu Gln Asp Val Arg Gln Ser  
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 <211> 1207  
 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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 35 40 45  
 Leu Pro Glu Asn Lys Pro Cys Tyr Leu Leu Asp Ile Gly Cys Gly Thr  
 50 55 60  
 Gly Leu Ser Gly Ser Tyr Leu Ser Asp Glu Gly His Tyr Trp Val Gly  
 65 70 75 80  
 Leu Asp Ile Ser Pro Ala Met Leu Asp Glu Ala Val Asp Arg Glu Ile  
 85 90 95  
 Glu Gly Asp Leu Leu Leu Gly Asp Met Gly Gln Gly Ile Pro Phe Lys

100 105 110  
 Pro Gly Thr Phe Asp Gly Cys Ile Ser Ile Ser Ala Val His Trp Leu  
 115 120 125  
 Cys Asn Ala Asn Lys Lys Ser Glu Asn Pro Ala Lys Arg Leu Tyr Cys  
 130 135 140  
 Phe Phe Ala Ser Leu Phe Ser Val Leu Val Arg Gly Ser Arg Ala Val  
 145 150 155 160  
 Leu Gln Leu Tyr Pro Glu Asn Ser Glu Gln Leu Glu Leu Ile Thr Thr  
 165 170 175  
 Gln Ala Thr Lys Ala Gly Phe Ser Gly Gly Met Val Val Asp Tyr Pro  
 180 185 190  
 Asn Ser Ala Lys Ala Lys Lys Phe Tyr Leu Cys Leu Phe Ser Gly Pro  
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 Ser Thr Phe Ile Pro Glu Gly Leu Ser Glu Asn Gln Asp Glu Val Glu  
 210 215 220  
 Pro Arg Glu Ser Val Phe Thr Asn Glu Arg Phe Pro Leu Arg Met Ser  
 225 230 235 240  
 Arg Arg Gly Met Val Arg Lys Ser Arg Ala Trp Val Leu Glu Lys Lys  
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 <211> 1490  
 <212> DNA  
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&lt;210&gt; 56

&lt;211&gt; 208

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 56

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20 25 30

Pro Thr Val Leu Arg Trp Ala Val Val Glu Ala Leu Leu Pro Ala Val  
35 40 45

Cys Gly Thr Ser Pro Ala Leu Phe Phe Pro Val Pro Ile Gly Ser Leu  
50 55 60

Arg Ala Arg Val Phe His Ser Lys Thr Val Leu Cys Asn Ser Phe Gln  
65 70 75 80

Gln Ser Asn Asn Pro Pro Leu Gln Arg Ser Ser Ser Leu Ile Gln Leu  
85 90 95

Thr Ser Gln Asn Ser Ser Pro Asn Gln Gln Arg Thr Pro Gln Val Ile  
100 105 110

Gly Val Met Gln Ser Gln Asn Ser Ser Gly Gly Asn Arg Gly Pro Gly  
115 120 125

His Trp Ser Arg Ser Pro Val Thr Ser Val Ala Arg Lys Asp Thr Thr  
130 135 140

Pro Thr Asp Ala Pro Lys Gly Thr Trp Pro Phe Ser Val Asp Ser Asp  
145 150 155 160

Ser Ser Trp Ser Gln Leu Arg Ala Ala Arg Gly Pro Arg Cys Trp Glu  
165 170 175

Cys Ala Phe Asn Cys Phe Met Arg Leu Leu Ala Arg Leu Trp Leu Glu  
180 185 190

Leu Ala Arg Arg His Val Gly Phe Ile Thr Leu Arg Gly His Val Cys  
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&lt;210&gt; 57

&lt;211&gt; 4184

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 57

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&lt;210&gt; 58

&lt;211&gt; 306

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 58

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Ser Ser Gly Gln Val His Ala Phe Gly Asn Cys Ser Asp Ser Asp Ile  
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Leu Glu Glu Asp Ala Glu Val Tyr Glu Leu Arg Ser Arg Gly Lys Glu  
 35 40 45

Lys Val Arg Arg Ser Thr Ser Arg Asp Arg Leu Asp Asp Ile Ile Val  
 50 55 60

Leu Thr Lys Asp Ile Gln Glu Gly Asp Thr Leu Asn Ala Ile Ala Leu  
 65 70 75 80

Gln Tyr Cys Cys Thr Val Ala Asp Ile Lys Arg Val Asn Asn Leu Ile  
 85 90 95

Ser Asp Gln Asp Phe Phe Ala Leu Arg Ser Ile Lys Ile Pro Val Lys  
 100 105 110

Lys Phe Ser Ser Leu Thr Glu Thr Leu Cys Pro Pro Lys Gly Arg Gln  
 115 120 125

Thr Ser Arg His Ser Ser Val Gln Tyr Ser Ser Glu Gln Gln Glu Ile  
 130 135 140

Leu Pro Ala Asn Asp Ser Leu Ala Tyr Ser Asp Ser Ala Gly Ser Phe  
 145 150 155 160

Leu Lys Glu Val Asp Arg Asp Ile Glu Gln Ile Val Lys Cys Thr Asp  
 165 170 175

Asn Lys Arg Glu Asn Leu His Glu Val Val Ser Ala Phe Thr Ala Gln  
 180 185 190

Gln Met Arg Phe Glu Pro Asp Asn Lys Asn Thr Gln Arg Lys Asp Pro  
 195 200 205

Tyr Tyr Gly Ala Asp Trp Gly Ile Gly Trp Trp Thr Ala Val Val Ile  
 210 215 220

Met Leu Ile Val Gly Ile Ile Thr Pro Val Phe Tyr Leu Leu Tyr Tyr

225                      230                      235                      240  
 Glu Ile Leu Ala Lys Val Asp Val Ser His His Ser Thr Val Asp Ser  
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 Ser His Leu His Ser Lys Ile Thr Pro Pro Ser Gln Gln Arg Glu Met  
                                  260                      265                      270  
 Glu Asn Gly Ile Val Pro Thr Lys Gly Ile His Phe Ser Gln Gln Asp  
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 Glu Thr  
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<210> 59  
 <211> 3191  
 <212> DNA  
 <213> Homo sapiens

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&lt;210&gt; 60

&lt;211&gt; 568

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 60

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Arg Gly Ser Gln Ser Pro Lys Arg Tyr Lys Leu Arg Asp Asp Phe Glu
      20             25             30

Lys Lys Met Ala Asp Phe His Lys Glu Glu Met Asp Asp Gln Asp Lys
      35             40             45

Asp Lys Ala Lys Gly Arg Lys Glu Ser Glu Phe Asp Asp Glu Pro Lys
      50             55             60

Phe Met Ser Lys Val Ile Gly Ala Asn Lys Asn Gln Glu Glu Glu Lys
      65             70             75             80

Ser Gly Lys Trp Glu Gly Leu Val Tyr Ala Pro Pro Gly Lys Glu Lys
      85             90             95

Gln Arg Lys Thr Glu Glu Leu Glu Glu Glu Ser Phe Pro Glu Arg Ser
      100            105            110

Lys Lys Glu Asp Arg Gly Lys Arg Ser Glu Gly Gly His Arg Gly Phe
      115            120            125

Val Pro Glu Lys Asn Phe Arg Val Thr Ala Tyr Lys Ala Val Gln Glu
      130            135            140

Lys Ser Ser Ser Pro Pro Pro Arg Lys Thr Ser Glu Ser Arg Asp Lys
      145            150            155            160

Leu Gly Ala Lys Gly Asp Phe Pro Thr Gly Lys Ser Ser Phe Ser Ile
      165            170            175

Thr Arg Glu Ala Gln Val Asn Val Arg Met Asp Ser Phe Asp Glu Asp
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Leu Ala Arg Pro Ser Gly Leu Leu Ala Gln Glu Arg Lys Leu Cys Arg  
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 Asp Leu Val His Ser Asn Lys Lys Glu Gln Glu Phe Arg Ser Ile Phe  
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 Gln His Ile Gln Ser Ala Gln Ser Gln Arg Ser Pro Ser Glu Leu Phe  
 225 230 235 240  
 Ala Gln His Ile Val Thr Ile Val His His Val Lys Glu His His Phe  
 245 250 255  
 Gly Ser Ser Gly Met Thr Leu His Glu Arg Phe Thr Lys Tyr Leu Lys  
 260 265 270  
 Arg Gly Thr Glu Gln Glu Ala Ala Lys Asn Lys Lys Ser Pro Glu Ile  
 275 280 285  
 His Arg Arg Ile Asp Ile Ser Pro Ser Thr Phe Arg Lys His Gly Leu  
 290 295 300  
 Ala His Asp Glu Met Lys Ser Pro Arg Glu Pro Gly Tyr Lys Ala Glu  
 305 310 315 320  
 Gly Lys Tyr Lys Asp Pro Val Asp Leu Arg Leu Asp Ile Glu Arg  
 325 330 335  
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 370 375 380  
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 385 390 395 400  
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 Glu Ser Thr Thr Gly Phe Asp Lys Ser Arg Leu Gly Thr Lys Asp Phe  
 420 425 430  
 Val Gly Pro Ser Glu Arg Gly Gly Gly Arg Ala Arg Gly Thr Phe Gln  
 435 440 445  
 Phe Arg Ala Arg Gly Arg Gly Trp Gly Arg Gly Asn Tyr Ser Gly Asn  
 450 455 460  
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 465 470 475 480  
 Glu Trp Asp Pro Glu Tyr Thr Pro Lys Ser Lys Lys Tyr Asn Leu His  
 485 490 495  
 Asp Asp Arg Glu Gly Glu Gly Ser Asp Lys Trp Val Ser Arg Gly Arg  
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Gly Arg Gly Ala Phe Pro Arg Gly Arg Gly Arg Phe Met Phe Arg Lys  
515 520 525

Ser Ser Thr Ser Pro Lys Trp Ala His Asp Lys Phe Ser Gly Glu Glu  
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Gly Glu Ile Glu Asp Asp Glu Ser Gly Thr Glu Asn Arg Glu Glu Lys  
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<210> 61

<211> 3145

<212> DNA

<213> Homo sapiens

<400> 61

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&lt;210&gt; 62

&lt;211&gt; 574

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 62

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 35 40 45  
 Tyr Ser Asp Val Val Asp Glu Arg Ser Ile Val Lys Leu Cys Gly Tyr  
 50 55 60  
 Pro Leu Cys Gln Lys Lys Leu Gly Ile Val Pro Lys Gln Lys Tyr Lys  
 65 70 75 80  
 Ile Ser Thr Lys Thr Asn Lys Val Tyr Asp Ile Thr Glu Arg Lys Ser  
 85 90 95  
 Ile Ser Thr Lys Thr Asn Lys Val Tyr Asp Ile Thr Glu Arg Lys Ser  
 85 90 95  
 Phe Cys Ser Asn Phe Cys Tyr Gln Ala Ser Lys Phe Phe Glu Ala Gln  
 100 105 110  
 Ile Pro Lys Thr Pro Val Trp Val Arg Glu Glu Glu Arg His Pro Asp  
 115 120 125  
 Phe Gln Leu Leu Lys Glu Glu Gln Ser Gly His Ser Gly Glu Glu Val  
 130 135 140  
 Gln Leu Cys Ser Lys Ala Ile Lys Thr Ser Asp Ile Asp Asn Pro Ser  
 145 150 155 160  
 His Phe Glu Lys Gln Tyr Glu Ser Ser Ser Ser Ser Thr His Ser Asp  
 165 170 175  
 Ser Ser Ser Asp Asn Glu Gln Asp Phe Val Ser Ser Ile Leu Pro Gly  
 180 185 190  
 Asn Arg Pro Asn Ser Thr Asn Ile Arg Pro Gln Leu His Gln Lys Ser  
 195 200 205



Ile Met Lys Lys Lys Ala Gly His Lys Ala Asn Ser Lys His Lys His  
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 Lys Glu Gln Thr Val Val Asp Val Thr Glu Gln Leu Gly Asp Cys Lys  
 225 230 235 240  
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 245 250 255  
 Val Asn Thr Gln Ser Ser Ser Asn Ser Thr Leu Pro Glu Arg Leu Lys  
 260 265 270  
 Ala Ser Glu Asn Ser Glu Ser Glu Tyr Ser Arg Ser Glu Ile Thr Leu  
 275 280 285  
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 Lys Ser Asn Gln Val Ser Arg Ser Val Ser Asn Ser Val Gln Val Cys  
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 Pro Glu Val Gly Lys Arg Asn Leu Leu Lys Val Leu Lys Glu Thr Leu  
 325 330 335  
 Ile Glu Trp Lys Thr Glu Glu Thr Leu Arg Phe Leu Tyr Gly Gln Asn  
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 Tyr Ala Ser Val Cys Leu Lys Pro Glu Ala Ser Leu Val Lys Glu Glu  
 355 360 365  
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 485 490 495  
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 Ala Glu Trp Thr Leu Ile Ala Met Val Leu Leu Ser Leu Leu Thr Pro  
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Ile Leu Gly Ile Gln Lys His Ser Gln Glu Gly Met Val Phe Thr Arg  
 530 535 540

Phe Leu Asp Thr Leu Leu Glu Glu Leu His Leu Lys Asn Glu Asp Leu  
 545 550 555 560

Glu Ser Leu Thr Ile Phe Arg Thr Ser Cys Leu Pro Glu  
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<210> 63  
 <211> 1812  
 <212> DNA  
 <213> Homo sapiens

<400> 63  
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 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<400> 64  
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Ser Ile Phe Phe Phe Phe Leu Ser Pro Asn Leu Asn Arg Ser Lys Met  
 35 40 45

Cys Ser Gly Ile Pro Gly Asn Arg Cys Val Cys Lys Val Lys Asn Arg  
 50 55 60

Leu Phe Arg Asn Ser Leu Phe Arg Tyr Leu His Pro Ala Ser His Val  
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Lys Tyr Leu Ser Leu Lys Gly Leu Arg Cys Thr Ser Phe Ile Ser Tyr  
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Phe Ser

<210> 65

<211> 1558

<212> DNA

<213> Homo sapiens

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<210> 66

<211> 437

<212> PRT

<213> Homo sapiens

<400> 66

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 Ser Ile Thr Gly Ile Trp Thr Val Tyr Ala Met Ala Val Met Asn His  
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 His Val Cys Pro Val Glu Asn Trp Ser Tyr Asn Glu Ser Cys Pro Pro  
 85 90 95  
 Asp Pro Ala Glu Gln Gly Gly Pro Lys Thr Cys Cys Thr Leu Asp Asp  
 100 105 110  
 Val Pro Leu Ile Ser Lys Cys Gly Ser Tyr Pro Pro Glu Ser Cys Leu  
 115 120 125  
 Phe Ser Leu Ile Gly Asn Met Gly Ala Phe Met Val Ala Leu Ile Cys  
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 Leu Leu Arg Tyr Gly Gln Leu Leu Glu Gln Ser Arg His Ser Trp Val  
 145 150 155 160  
 Asn Thr Thr Ala Leu Ile Thr Gly Cys Thr Asn Ala Ala Gly Leu Leu  
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 Val Val Gly Asn Phe Gln Val Asp His Ala Arg Ser Leu His Tyr Val  
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 Gly Ala Gly Val Ala Phe Pro Ala Gly Leu Leu Phe Val Cys Leu His  
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 Cys Leu Ser Pro Thr Lys Gly Pro Pro Pro Arg Trp Thr Trp Leu Trp  
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 Ser Val Glu Ser Ser Leu Ser Met Arg Val Leu Ser Cys Asn Met Gly  
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 Ala Ala Leu His Pro Pro Gln Leu Cys Pro Arg Glu His Arg Tyr Asp  
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 325 330 335  
 Ile Ser Ser Phe His Leu Phe Arg Thr Lys Asn Asn Phe Glu Lys Val

340                      345                      350  
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 <213> Homo sapiens

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&lt;210&gt; 68

&lt;211&gt; 473

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 68

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Thr Val Pro Glu Asp Asp Asn Ile Ser Asn Asp Ser Asn Asp Phe Thr  
 20 25 30

Glu Val Glu Asn Gly Gln Ile Asn Ser Lys Phe Ile Ser Asp Arg Glu  
 35 40 45

Ser Arg Arg Ser Leu Thr Asn Ser His Leu Glu Lys Lys Lys Cys Asp  
 50 55 60

Glu Tyr Ile Pro Gly Thr Thr Ser Leu Gly Met Phe Val Phe Asn Leu  
 65 70 75 80

Ser Asn Ser Met Met Gly Ser Gly Ile Trp Asp Ser Leu Cys Pro Gly  
 85 90 95

Asn Thr Gly Ile Leu Leu Phe Leu Val Leu Leu Thr Ser Val Thr Leu  
 100 105 110

Leu Ser Ile Tyr Ser Ile Asn Leu Leu Leu Ile Cys Ser Lys Glu Thr  
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Gly Cys Met Val Tyr Glu Lys Leu Gly Glu Gln Val Phe Gly Thr Thr  
 130 135 140

Gly Lys Phe Val Ile Phe Gly Ala Thr Ser Leu Gln Asn Thr Gly Ala  
 145 150 155 160

Met Leu Ser Tyr Leu Phe Ile Val Lys Asn Glu Leu Pro Ser Ala Ile  
 165 170 175

Lys Phe Leu Met Gly Lys Glu Glu Thr Phe Ser Ala Trp Tyr Val Asp  
 180 185 190

Gly Arg Val Leu Val Val Ile Val Thr Phe Gly Ile Ile Leu Pro Leu  
 195 200 205

Cys Leu Leu Lys Asn Leu Gly Tyr Leu Gly Tyr Thr Ser Gly Phe Ser  
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Leu Ser Cys Met Val Phe Phe Leu Ile Val Val Ile Tyr Lys Lys Phe

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<211> 1999
<212> DNA
<213> Homo sapiens
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&lt;210&gt; 70

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 70

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Ala Asn Lys Met Phe Ile Gly Trp Ser Gln Leu Thr Met Tyr Tyr Trp
      35              40              45

Gln His Phe Leu Asp Gly Tyr Leu Leu Gly Pro Phe Ile Arg Lys Arg
      50              55              60

Glu Arg Met Gly Trp Phe Cys Met Gly Ser Cys Leu Gly Val Lys Ile
      65              70              75              80

Ala Glu Ser Val Ala Glu Asp Asn Asp Leu Pro Tyr Asn Ile Ser Phe
      85              90              95

Ile Pro Ile Leu Gly Leu Val Leu Arg Thr Leu Tyr Met Cys Leu Phe
      100             105             110

Thr Ser Gly Leu Pro Ala Ile Ala Phe Leu Pro Phe Phe Pro Ile Leu
      115             120             125

Arg Ile Lys Lys Lys Asn Tyr Arg Ala Ser Lys Gly Gly Arg Lys

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130

135

140

Gln Lys Ser Asn Phe Ile Ile Pro Val  
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&lt;210&gt; 71

&lt;211&gt; 2020

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 71

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&lt;210&gt; 72

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 72

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Met Ala Val Gly Pro Ala Gln Ala Ser Thr Gly Ser Leu Leu Ser Leu
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Gln Tyr Ala Pro Ala Leu Pro Pro Pro Ala Gly Asn Val Leu Ala Ser
      20              25              30

Gln Pro Ser Thr Ile Cys Ser Pro Ile Leu Leu Arg Gly Gln Pro Ser

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35

40

45

Leu Gly His Pro Leu Phe Pro Ser Ser Ser Ala Pro Thr Gln Val Thr  
 50 55 60

Asp Pro Ala Asp Ser Phe Ser Leu Gly Lys Val Gly Cys Cys Leu Thr  
 65 70 75 80

Ser Pro Ser Ser Pro Pro Ile His Thr His Arg His Pro Pro Thr  
 85 90 95

Pro Gly Arg Leu Val Ser His Met  
 100

&lt;210&gt; 73

&lt;211&gt; 760

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 73

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 cctcatagtg caaaaaaaaa aaaaaaaaaa aaaaaaaaaa 760

&lt;210&gt; 74

&lt;211&gt; 102

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 74

Met Leu Glu His Leu Ser Ser Leu Pro Thr Gln Met Asp Tyr Lys Gly  
 1 5 10 15

Gln Lys Leu Ala Glu Gln Met Phe Gln Gly Ile Ile Leu Phe Ser Ala  
 20 25 30

Ile Val Gly Phe Ile Tyr Gly Tyr Val Ala Glu Gln Phe Gly Trp Thr  
 35 40 45

Val Tyr Ile Val Met Ala Gly Phe Ala Phe Ser Cys Leu Leu Thr Leu  
 50 55 60

Pro Pro Trp Pro Ile Tyr Arg Arg His Pro Leu Lys Trp Leu Pro Val  
 65 70 75 80

Gln Glu Ser Ser Thr Asp Asp Lys Lys Pro Gly Glu Arg Lys Ile Lys  
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Arg His Ala Lys Asn Asn

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<210> 75  
 <211> 875  
 <212> DNA  
 <213> Homo sapiens

<400> 75  
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<210> 76  
 <211> 112  
 <212> PRT  
 <213> Homo sapiens

<400> 76  
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 Ala Glu Gly Ala Gly Leu Arg Leu Cys Thr Cys Ser Leu His Ala Thr  
 35 40 45  
 Leu Gly Leu Cys Trp Arg Arg Ser Pro Ser Phe Trp Val Gln Thr Ala  
 50 55 60  
 Pro Pro Asp Ala Val Leu Met Ser Ile Phe Gln Glu Arg Asp Gly Leu  
 65 70 75 80  
 Gly Ser Arg Glu Trp Arg Gly Leu Pro Leu Pro Cys Arg Ser Trp Pro  
 85 90 95  
 Met Ala Pro Tyr Pro Ala Ala Leu Gly Phe Trp Pro Glu Ala Asn Ser  
 100 105 110

<210> 77  
 <211> 2848  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure

&lt;222&gt; (2526)

&lt;400&gt; 77

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2848

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&lt;210&gt; 78

&lt;211&gt; 532

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 78

Met Val Gln Glu Arg Lys Ile Pro Ala His Arg Val Val Leu Ala Ala  
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 Lys Ser Phe Glu Val Glu Leu Lys Asp Ala Glu Pro Asp Ile Ile Glu  
 35 40 45  
 Gln Leu Val Glu Phe Ala Tyr Thr Ala Arg Ile Ser Val Asn Ser Asn  
 50 55 60  
 Asn Val Gln Ser Leu Leu Asp Ala Ala Asn Gln Tyr Gln Ile Glu Pro  
 65 70 75 80  
 Val Lys Lys Met Cys Val Asp Phe Leu Lys Glu Gln Val Asp Ala Ser  
 85 90 95  
 Asn Cys Leu Gly Ile Ser Val Leu Ala Glu Cys Leu Asp Cys Pro Glu  
 100 105 110  
 Leu Lys Ala Thr Ala Asp Asp Phe Ile His Gln His Phe Thr Glu Val  
 115 120 125  
 Tyr Lys Thr Asp Glu Phe Leu Gln Leu Asp Val Lys Arg Val Thr His  
 130 135 140  
 Leu Leu Asn Gln Asp Thr Leu Thr Val Arg Ala Glu Asp Gln Val Tyr  
 145 150 155 160  
 Asp Ala Ala Val Arg Trp Leu Lys Tyr Asp Glu Pro Asn Arg Gln Pro  
 165 170 175  
 Phe Met Val Asp Ile Leu Ala Lys Val Arg Phe Pro Leu Ile Ser Lys  
 180 185 190  
 Asn Phe Leu Ser Lys Thr Val Gln Ala Glu Pro Leu Ile Gln Asp Asn  
 195 200 205  
 Pro Glu Cys Leu Lys Met Val Ile Ser Gly Met Arg Tyr His Leu Leu  
 210 215 220  
 Ser Pro Glu Asp Arg Glu Glu Leu Val Asp Gly Pro Arg Pro Arg Arg  
 225 230 235 240  
 Lys Lys His Asp Tyr Arg Ile Ala Leu Phe Gly Gly Ser Gln Pro Gln  
 245 250 255  
 Ser Cys Arg Tyr Phe Asn Pro Lys Asp Tyr Ser Trp Thr Asp Ile Arg  
 260 265 270  
 Cys Pro Phe Glu Lys Pro Arg Asp Ala Ala Cys Val Phe Trp Asp Asn  
 275 280 285  
 Val Val Tyr Ile Leu Gly Gly Ser Gln Leu Phe Pro Ile Lys Arg Met  
 290 295 300  
 Asp Cys Tyr Asn Val Val Lys Asp Ser Trp Tyr Ser Lys Leu Gly Pro  
 305 310 315 320  
 Pro Thr Pro Arg Asp Ser Leu Ala Ala Cys Ala Ala Glu Gly Lys Ile  
 325 330 335

Tyr Thr Ser Gly Gly Ser Glu Val Gly Asn Ser Ala Leu Tyr Leu Phe  
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 Glu Cys Tyr Asp Thr Arg Thr Glu Ser Trp His Thr Lys Pro Ser Met  
 355 360 365  
 Leu Thr Gln Arg Cys Ser His Gly Met Val Glu Ala Asn Gly Leu Ile  
 370 375 380  
 Tyr Val Cys Gly Gly Ser Leu Gly Asn Asn Val Ser Gly Arg Val Leu  
 385 390 395 400  
 Asn Ser Cys Glu Val Tyr Asp Pro Ala Thr Glu Thr Trp Thr Glu Leu  
 405 410 415  
 Cys Pro Met Ile Glu Ala Arg Lys Asn His Gly Leu Val Phe Val Lys  
 420 425 430  
 Asp Lys Ile Phe Ala Val Gly Gly Gln Asn Gly Leu Gly Gly Leu Asp  
 435 440 445  
 Asn Val Glu Tyr Tyr Asp Ile Lys Leu Asn Glu Trp Lys Met Val Ser  
 450 455 460  
 Pro Met Pro Trp Lys Gly Val Thr Val Lys Cys Ala Ala Val Gly Ser  
 465 470 475 480  
 Ile Val Tyr Val Leu Ala Gly Phe Gln Gly Val Gly Arg Leu Gly His  
 485 490 495  
 Ile Leu Gln Tyr Asn Thr Glu Thr Asp Lys Trp Val Ala Asn Ser Gln  
 500 505 510  
 Val Arg Ala Phe Pro Val Thr Lys Leu Phe Asn Leu Cys Cys Arg Tyr  
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 Leu Trp Ser Lys  
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<210> 79  
 <211> 2232  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (2168)

<400> 79  
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 aaaaaaaa aa 2232

&lt;210&gt; 80

&lt;211&gt; 525

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 80

Met Ser Arg Tyr Tyr Leu Glu Leu Phe Gln Cys Pro Thr Cys Met Lys  
 1 5 10 15

Gly Ala Trp Ser Leu Val Glu Val Leu Ile Arg Ser Cys Leu Phe Asn  
 20 25 30

Glu Ser Phe Cys His Gln Ile Ser Glu Asn Ile Gly Ser Lys Val Leu  
 35 40 45

His Leu Thr Leu Leu Lys Phe Phe Phe Asn Leu Ile Glu Ser Glu Val  
 50 55 60

Gln His Leu Ser Gln Lys Leu Tyr Asp Trp Ser Asp Ser Gln Asn Leu  
 65 70 75 80

Lys Ile Thr Gly Lys Ala Met Leu Leu Glu Ile Phe Trp Ser Gly Ser  
 85 90 95

Glu Thr Ser Gly Leu Leu Thr Lys Pro Val Asn Met Leu Leu Glu Trp  
 100 105 110

Thr Ile Tyr Ser His Lys Glu Lys Phe Lys Ser Asn Asp Thr Phe Leu  
 115 120 125

Pro Gln Glu Leu Glu Ile Phe Ile Cys Ser Phe Ser Ser Ser Trp Leu  
 130 135 140  
 Gln Met Phe Val Ala Glu Ala Val Phe Lys Lys Leu Cys Leu Gln Ser  
 145 150 155 160  
 Ser Gly Ser Val Ser Ser Glu Pro Leu Ser Leu Gln Lys Met Val Tyr  
 165 170 175  
 Ser Tyr Leu Pro Ala Leu Gly Lys Thr Gly Val Leu Gly Ser Gly Lys  
 180 185 190  
 Ile Gln Val Ser Lys Lys Ile Gly Gln Arg Pro Cys Phe Asp Ser Gln  
 195 200 205  
 Arg Thr Leu Leu Met Leu Asn Gly Thr Lys Gln Lys Gln Val Glu Gly  
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 Leu Pro Glu Leu Leu Asp Leu Asn Leu Ala Lys Cys Ser Ser Ser Leu  
 225 230 235 240  
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 Asn Cys Pro Ser Val Val Lys Lys Met Asn Phe His Lys Thr Asn Leu  
 260 265 270  
 Lys Gly Glu Thr Ala Leu His Arg Ala Cys Ile Asn Asn Gln Val Glu  
 275 280 285  
 Lys Leu Ile Leu Leu Leu Ser Leu Pro Gly Ile Asp Ile Asn Val Lys  
 290 295 300  
 Asp Asn Ala Gly Trp Thr Pro Leu His Glu Ala Cys Asn Tyr Gly Asn  
 305 310 315 320  
 Thr Val Gly Val Gln Glu Ile Leu Gln Arg Cys Pro Glu Val Asp Leu  
 325 330 335  
 Leu Thr Gln Val Asp Gly Val Thr Pro Leu His Asp Ala Leu Ser Asn  
 340 345 350  
 Gly His Val Glu Ile Gly Lys Leu Leu Leu Gln His Gly Gly Pro Val  
 355 360 365  
 Leu Leu Gln Gln Arg Asn Ala Lys Gly Glu Leu Pro Leu Asp Tyr Val  
 370 375 380  
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 385 390 395 400  
 Asp Thr Val Glu Asn Phe His Ala Gln Ala Glu Lys His Phe His Tyr  
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 Gln Gln Leu Glu Phe Gly Ser Phe Leu Leu Ser Arg Met Leu Leu Asn  
 420 425 430  
 Phe Cys Ser Ile Phe Asp Leu Ser Ser Glu Phe Ile Leu Ala Ser Lys  
 435 440 445



Gly Leu Thr His Leu Asn Glu Leu Leu Met Ala Cys Lys Ser His Lys  
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Glu Thr Thr Ser Val His Thr Asp Trp Leu Leu Asp Leu Tyr Ala Gly  
 465 470 475 480

Asn Ile Lys Thr Leu Gln Lys Leu Pro His Ile Leu Lys Glu Leu Pro  
 485 490 495

Glu Asn Leu Lys Val Cys Pro Gly Val His Thr Glu Ala Leu Met Ile  
 500 505 510

Thr Leu Glu Met Met Cys Arg Ser Val Met Glu Phe Ser  
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<210> 81

<211> 2625

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (2559)

<220>

<221> unsure

<222> (2561)

<400> 81

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```

&lt;210&gt; 82

&lt;211&gt; 490

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 82

```

Met Leu Trp Arg Ala Leu Ala Val Glu Pro Arg Leu Ala Ala Gln Val
  1             5             10             15

Leu Gly Leu Leu Leu Glu Lys Met Ser Arg Asp Val Pro Phe Lys Glu
      20             25             30

Ser Arg Ala Phe Leu Leu Gly Arg Thr Pro Asp Arg Val Ala Thr Leu
      35             40             45

Leu Pro Leu Ser Ala Thr Cys Ala Leu Phe Glu Val Met Ser Thr Pro
      50             55             60

Ala Ala Gly Pro Ala Val Leu Glu Leu Tyr Pro Gln Leu Phe Val Val
      65             70             75             80

Leu Leu Leu Arg Val Ser Cys Thr Val Gly Val Gln Leu Pro Arg Asn
      85             90             95

Leu Gln Ala Gln Glu Arg Arg Gly Ala Ser Pro Ala Leu Ala Thr Arg
      100            105            110

Asn Leu Glu Pro Cys Ser Ser Ala Val Asp Thr Leu Arg Ser Met Leu
      115            120            125

Leu Arg Ser Gly Ser Glu Asp Val Val Gln Arg Met Asp Leu Glu Gly
      130            135            140

Gly Trp Glu Leu Leu Arg Thr Ser Ala Gly His Glu Glu Gly Ala Thr
      145            150            155            160

Arg Leu Ala Arg Ala Met Ala Glu His Ala Gly Pro Arg Leu Pro Leu
      165            170            175

Val Leu Lys Thr Leu Ala Cys Thr His Ser Ser Ala Tyr Glu Asn Gln
      180            185            190

Arg Val Thr Thr Thr Ala Phe Leu Ala Glu Leu Leu Asn Ser Asn Val
      195            200            205

```

Ala Asn Asp Leu Met Leu Leu Asp Ser Leu Leu Glu Ser Leu Ala Ala  
 210 215 220  
 Arg Gln Lys Asp Thr Cys Ala Ser Val Arg Arg Leu Val Leu Arg Gly  
 225 230 235 240  
 Leu Ala Asn Leu Ala Ser Gly Cys Pro Asp Lys Val Arg Thr His Gly  
 245 250 255  
 Pro Gln Leu Leu Thr Ala Met Ile Gly Gly Leu Asp Asp Gly Asp Asn  
 260 265 270  
 Pro His Ser Pro Val Ala Leu Glu Ala Met Leu Gly Leu Ala Arg Leu  
 275 280 285  
 Val His Leu Val Glu Ser Trp Asp Leu Arg Ser Gly Leu Leu His Val  
 290 295 300  
 Ala Ile Arg Ile Arg Pro Phe Phe Asp Ser Glu Lys Met Glu Phe Arg  
 305 310 315 320  
 Thr Ala Ser Ile Arg Leu Phe Gly His Leu Asn Lys Val Cys His Gly  
 325 330 335  
 Asp Cys Glu Asp Val Phe Leu Asp Gln Val Val Gly Gly Leu Ala Pro  
 340 345 350  
 Leu Leu Leu His Leu Gln Asp Pro Gln Ala Thr Val Ala Ser Ala Cys  
 355 360 365  
 Arg Phe Ala Leu Arg Met Cys Gly Pro Asn Leu Ala Cys Glu Glu Leu  
 370 375 380  
 Ser Ala Ala Phe Gln Lys His Leu Gln Glu Gly Arg Ala Leu His Phe  
 385 390 395 400  
 Gly Glu Phe Leu Asn Thr Thr Cys Lys His Leu Met His His Phe Pro  
 405 410 415  
 Asp Leu Leu Gly Arg Leu Leu Thr Thr Cys Leu Phe Tyr Phe Lys Ser  
 420 425 430  
 Ser Trp Glu Asn Val Arg Ala Ala Ala Pro Leu Phe Thr Gly Lys His  
 435 440 445  
 His Pro Leu Pro His Pro His Ala Ala Arg Gln Pro Arg Leu Met Pro  
 450 455 460  
 Pro Leu His Arg Val Pro Gly Ala Ala Leu Gly Ala Gln Ala Ala Ala  
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 Ala Gly Gly Pro Gly Pro Ala His Cys Gly  
 485 490

<210> 83  
 <211> 1476  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 83

```

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```

&lt;210&gt; 84

&lt;211&gt; 382

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 84

```

Met Ser Glu Pro Pro Ile Ala His Leu Leu Arg Pro Val Leu Pro Arg
 1             5             10             15

Ala Phe Ala Phe Pro Val Asp Pro Gln Val Gln Ser Ala Ala Asp Glu
      20             25             30

Thr Ala Val Gln Leu Ser Glu Leu Leu Thr Leu Pro Val Leu Met Lys
      35             40             45

Arg Ser Ile Thr Ala Pro Leu Ala Ala His Ile Ser Leu Val Asn Lys
      50             55             60

Ala Ala Val Asp Tyr Phe Phe Val Glu Leu His Leu Glu Ala His Tyr
      65             70             75             80

Glu Ala Leu Arg His Phe Leu Leu Met Glu Asp Gly Glu Phe Ala Gln
      85             90             95

Ser Leu Ser Asp Leu Leu Phe Glu Lys Leu Gly Ala Gly Gln Thr Pro
      100            105            110

Arg Arg Ala Ala Gln Pro Ala Gly Ala Glu Leu Cys Ala Asp Lys Ala
      115            120            125

Leu Gln Cys Ser Leu His Gly Asp Thr Pro His Ala Ser Asn Leu Ser
      130            135            140

```

Leu Ala Leu Lys Tyr Leu Pro Glu Val Phe Ala Pro Asn Ala Pro Asp  
 145 150 155 160  
 Val Leu Ser Cys Leu Glu Leu Arg Tyr Lys Val Asp Trp Pro Leu Asn  
 165 170 175  
 Ile Val Ile Thr Glu Gly Cys Leu Ser Lys Tyr Ser Gly Val Phe Ser  
 180 185 190  
 Phe Leu Leu Gln Leu Lys Leu Met Met Trp Ala Leu Lys Asp Val Cys  
 195 200 205  
 Phe His Leu Lys Arg Thr Ala Leu Leu Ser His Met Ala Gly Ser Val  
 210 215 220  
 Gln Phe Arg Gln Leu Gln Leu Phe Lys His Glu Met Gln His Phe Val  
 225 230 235 240  
 Lys Val Ile Gln Gly Tyr Ile Ala Asn Gln Ile Leu His Val Thr Trp  
 245 250 255  
 Cys Glu Phe Arg Ala Arg Leu Ala Thr Val Gly Asp Leu Glu Glu Ile  
 260 265 270  
 Gln Arg Ala His Ala Glu Tyr Leu His Lys Ala Val Phe Arg Gly Leu  
 275 280 285  
 Leu Thr Glu Lys Ala Ala Pro Val Met Asn Val Ile His Ser Ile Phe  
 290 295 300  
 Ser Leu Val Leu Lys Phe Arg Ser Gln Leu Ile Ser Gln Ala Trp Gly  
 305 310 315 320  
 Pro Pro Gly Gly Pro Arg Gly Ala Glu His Pro Asn Phe Ala Leu Met  
 325 330 335  
 Gln Gln Ser Tyr Asn Thr Phe Lys Tyr Tyr Ser His Phe Leu Phe Lys  
 340 345 350  
 Val Val Thr Lys Leu Val Asn Arg Gly Tyr Gln Pro His Leu Glu Asp  
 355 360 365  
 Phe Leu Leu Arg Ile Asn Phe Asn Asn Tyr Tyr Gln Asp Ala  
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<210> 85  
 <211> 1212  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (1146)..(1147)

<400> 85  
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 ccgtaactat tgtggccctc tcagtggccc tgggactctt ctttgttttc atggggacta 180  
 tcaagctgac ccccgagctc agcaaggatg cctacagtga gatgaaacgt gcttacaaga 240

```

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&lt;210&gt; 86

&lt;211&gt; 167

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 86

```

Met Ala Ser Pro Arg Thr Val Thr Ile Val Ala Leu Ser Val Ala Leu
  1             5             10             15

```

```

Gly Leu Phe Phe Val Phe Met Gly Thr Ile Lys Leu Thr Pro Arg Leu
          20             25             30

```

```

Ser Lys Asp Ala Tyr Ser Glu Met Lys Arg Ala Tyr Lys Ser Tyr Val
          35             40             45

```

```

Arg Ala Leu Pro Leu Leu Lys Lys Met Gly Ile Asn Ser Ile Leu Leu
          50             55             60

```

```

Arg Lys Ser Ile Gly Ala Leu Glu Val Ala Cys Gly Ile Val Met Thr
          65             70             75             80

```

```

Leu Val Pro Gly Arg Pro Lys Asp Val Ala Asn Phe Phe Leu Leu Leu
          85             90             95

```

```

Leu Val Leu Ala Val Leu Phe Phe His Gln Leu Val Gly Asp Pro Leu
          100            105            110

```

```

Lys Arg Tyr Ala His Ala Leu Val Phe Gly Ile Leu Leu Thr Cys Arg
          115            120            125

```

```

Leu Leu Ile Ala Arg Lys Pro Glu Asp Arg Ser Ser Glu Lys Lys Pro
          130            135            140

```

```

Leu Pro Gly Asn Ala Glu Glu Gln Pro Ser Leu Tyr Glu Lys Ala Pro
          145            150            155            160

```

```

Gln Gly Lys Val Lys Val Ser
          165

```

&lt;210&gt; 87

&lt;211&gt; 1059

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 87

```

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aacgacaaca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1059

```

&lt;210&gt; 88

&lt;211&gt; 192

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 88

```

Met Thr Lys Gly Ile Thr Phe Leu Asn Leu Asp Tyr Tyr Val Ala Val
  1             5             10             15

Tyr Leu Pro Gly His Phe Phe His Leu Leu Asn Val Gln His Pro Asp
    20             25             30

Leu Ile Cys His Asn Leu Phe Leu Thr Gly Asn Asn Glu Met Ile Asp
    35             40             45

Met Leu Pro His Cys Pro Leu Gln Ser Leu Ser Gly Ser Leu Val Leu
    50             55             60

Asp Cys Cys Ser Gly Lys Leu Tyr Arg Ala Leu Leu Ser Gln Ser Ser
    65             70             75             80

Leu Leu Gln Leu Leu Gln Asn Thr Cys Leu Asp Cys Glu Lys Met Ala
    85             90             95

Ala Leu His Cys Ala Leu Tyr Cys Gly Gln Gly Ala Gln Phe Leu Glu
   100             105             110

Ala Gln Ile Ile Gln Trp Ile Ser Glu Asn Val Ser Ala Cys His Ser
   115             120             125

Phe Asp Leu Ile Gln Glu Phe Ile Ile Ala Ser Ser Tyr Trp Ser Val
   130             135             140

Tyr Ser Glu Thr Ser Asn Met Asp Lys Leu Leu Pro His Ser Ser Val
   145             150             155             160

Leu Thr Trp Asn Thr Glu Ile Pro Gly Ile Thr Leu Val Thr Glu Asp

```

165

170

175

Ile Ala Leu Pro Leu Met Lys Val Leu Lys Asn Val Leu Gly Ser Lys  
 180 185 190

&lt;210&gt; 89

&lt;211&gt; 2529

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 89

```

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2529

&lt;210&gt; 90

&lt;211&gt; 244

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens



&lt;400&gt; 90

Met Glu Leu Thr Ile Phe Ile Leu Arg Leu Ala Ile Tyr Ile Leu Thr  
 1 5 10 15

Phe Pro Leu Tyr Leu Leu Asn Phe Leu Gly Leu Trp Ser Trp Ile Cys  
 20 25 30

Lys Lys Trp Phe Pro Tyr Phe Leu Val Arg Phe Thr Val Ile Tyr Asn  
 35 40 45

Glu Gln Met Ala Ser Lys Lys Arg Glu Leu Phe Ser Asn Leu Gln Glu  
 50 55 60

Phe Ala Gly Pro Ser Gly Lys Leu Ser Leu Leu Glu Val Gly Cys Gly  
 65 70 75 80

Thr Gly Ala Asn Phe Lys Phe Tyr Pro Pro Gly Cys Arg Val Thr Cys  
 85 90 95

Ile Asp Pro Asn Pro Asn Phe Glu Lys Phe Leu Ile Lys Ser Ile Ala  
 100 105 110

Glu Asn Arg His Leu Gln Phe Glu Arg Phe Val Val Ala Ala Gly Glu  
 115 120 125

Asn Met His Gln Val Ala Asp Gly Ser Val Asp Val Val Val Cys Thr  
 130 135 140

Leu Val Leu Cys Ser Val Lys Asn Gln Glu Arg Ile Leu Arg Glu Val  
 145 150 155 160

Cys Arg Val Leu Arg Pro Gly Gly Ala Phe Tyr Phe Met Glu His Val  
 165 170 175

Ala Ala Glu Cys Ser Thr Trp Asn Tyr Phe Trp Gln Gln Val Leu Asp  
 180 185 190

Pro Ala Trp His Leu Leu Phe Asp Gly Cys Asn Leu Thr Arg Glu Ser  
 195 200 205

Trp Lys Ala Leu Glu Arg Ala Ser Phe Ser Lys Leu Lys Leu Gln His  
 210 215 220

Ile Gln Ala Pro Leu Ser Trp Glu Leu Val Arg Pro His Ile Tyr Gly  
 225 230 235 240

Tyr Ala Val Lys

&lt;210&gt; 91

&lt;211&gt; 2390

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 91

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 <211> 212  
 <212> PRT  
 <213> Homo sapiens

<400> 92  
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 Thr Leu Val Val Ala Gly Met Val Gly Ser Ile Leu Cys Gly Leu Trp  
 35 40 45  
 Leu Asp Tyr Thr Lys Thr Tyr Lys Gln Thr Thr Leu Ile Val Tyr Ile  
 50 55 60  
 Leu Ser Phe Ile Gly Met Val Ile Phe Thr Phe Thr Leu Asp Leu Arg  
 65 70 75 80  
 Tyr Ile Ile Ile Val Phe Val Thr Gly Gly Val Leu Gly Phe Phe Met

85

90

95

Thr Gly Tyr Leu Pro Leu Gly Phe Glu Phe Ala Val Glu Ile Thr Tyr  
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Pro Glu Ser Glu Gly Thr Ser Ser Gly Leu Leu Asn Ala Ser Ala Gln  
115 120 125

Ile Phe Gly Ile Leu Phe Thr Leu Ala Gln Gly Lys Leu Thr Ser Asp  
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Tyr Gly Pro Lys Ala Gly Asn Ile Phe Leu Cys Val Trp Met Phe Ile  
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Gly Ile Ile Leu Thr Ala Leu Ile Lys Ser Asp Leu Arg Arg His Asn  
165 170 175

Ile Asn Ile Gly Ile Thr Asn Val Asp Val Lys Ala Ile Pro Ala Asp  
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Ser Pro Thr Asp Gln Glu Pro Lys Thr Val Met Leu Ser Lys Gln Ser  
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Glu Ser Ala Ile  
210

&lt;210&gt; 93

&lt;211&gt; 2922

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 93

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&lt;210&gt; 94

&lt;211&gt; 451

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 94

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Met Ala Thr Tyr Thr Cys Ile Thr Cys Arg Val Ala Phe Arg Asp Ala
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Asp Met Gln Arg Ala His Tyr Lys Thr Asp Trp His Arg Tyr Asn Leu
 20             25             30

Arg Arg Lys Val Ala Ser Met Ala Pro Val Thr Ala Glu Gly Phe Gln
 35             40             45

Glu Arg Val Arg Ala Gln Arg Ala Val Ala Glu Glu Glu Ser Lys Gly
 50             55             60

Ser Ala Thr Tyr Cys Thr Val Cys Ser Lys Lys Phe Ala Ser Phe Asn
 65             70             75             80

Ala Tyr Glu Asn His Leu Lys Ser Arg Arg His Val Glu Leu Glu Lys
 85             90             95

Lys Ala Val Gln Ala Val Asn Arg Lys Val Glu Met Met Asn Glu Lys
100            105            110

Asn Leu Glu Lys Gly Leu Gly Val Asp Ser Val Asp Lys Asp Ala Met
115            120            125

Asn Ala Ala Ile Gln Gln Ala Ile Lys Ala Gln Pro Ser Met Ser Pro
130            135            140

Lys Lys Ala Pro Pro Ala Pro Ala Lys Glu Ala Arg Asn Val Val Ala
145            150            155            160

Val Gly Thr Gly Gly Arg Gly Thr His Asp Arg Asp Pro Ser Glu Lys

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 Asp Trp Glu Asp Ile Asp Ser Asp Glu Glu Leu Glu Cys Glu Asp Thr  
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                          275                      280                      285  
 Lys Gly Leu Ile Lys Tyr Leu Gly Glu Lys Val Gly Val Gly Lys Ile  
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 Cys Leu Trp Cys Asn Glu Lys Gly Lys Ser Phe Tyr Ser Thr Glu Ala  
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 Pro Ser Glu Lys Asn Leu Glu Tyr Asp Asp Glu Thr Met Glu Leu Ile  
                          370                      375                      380  
 Leu Pro Ser Gly Ala Arg Val Gly His Arg Ser Leu Met Arg Tyr Tyr  
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 Lys Gln Arg Phe Gly Leu Ser Arg Ala Val Ala Val Ala Lys Asn Arg  
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 Lys Ala Val Gly Arg Val Leu Gln Gln Tyr Arg Ala Leu Gly Trp Thr  
                          420                      425                      430  
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                          435                      440                      445  
 Leu Tyr Phe  
                          450

&lt;210&gt; 95

&lt;211&gt; 1395

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 95

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&lt;210&gt; 96

&lt;211&gt; 137

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 96

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Met Arg Val Ile Ser Gln Arg Tyr Pro Asp Ile Arg Ile Glu Gly Glu
  1              5              10              15

Asn Tyr Leu Pro Gln Pro Ile Tyr Arg His Ile Ala Ser Phe Leu Ser
  20              25              30

Val Phe Lys Leu Val Leu Ile Gly Leu Ile Ile Val Gly Lys Asp Pro
  35              40              45

Phe Ala Phe Phe Gly Met Gln Ala Pro Ser Ile Trp Gln Trp Gly Gln
  50              55              60

Glu Asn Lys Val Tyr Ala Cys Met Met Val Phe Phe Leu Ser Asn Met
  65              70              75              80

Ile Glu Asn Gln Cys Met Ser Thr Gly Ala Phe Glu Ile Thr Leu Asn
  85              90              95

Asp Val Pro Val Trp Ser Lys Leu Glu Ser Gly His Leu Pro Ser Met
 100              105              110

Gln Gln Leu Val Gln Ile Leu Asp Asn Glu Met Lys Leu Asn Val His
 115              120              125

Met Asp Ser Ile Pro His His Arg Ser
 130              135

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 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

<400> 98  
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 20 25 30  
 Lys Ala Ser Lys Ile Glu Trp Asp Thr Asp Gln Trp Lys Thr Glu Asn  
 35 40 45  
 Tyr Ile Asn Glu Ser Thr Glu Ala Gln Ser Glu Gln Lys Glu Lys Ser  
 50 55 60  
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 85 90 95  
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Glu Ala Leu Pro  
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<211> 915  
<212> DNA  
<213> Homo sapiens

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<212> PRT  
<213> Homo sapiens

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Ala Cys His Ser Arg Ser Ala Asp Val Asp Ser Leu Ser Glu Ser Ser  
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<210> 101  
<211> 2915  
<212> DNA  
<213> Homo sapiens

<400> 101  
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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2915

&lt;210&gt; 102

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 102

Met Phe Ile Gln Asn Leu Leu Trp Glu Lys Asn Val Arg Asn Lys Asp  
1 5 10 15

Asn His Cys Met Glu Val Ile Arg Leu Lys Gly Leu Val Ser Ile Lys  
20 25 30

Asp Lys Ser Gln Gln Val Ile Val Gln Gly Val His Glu Leu Tyr Asp  
35 40 45

Leu Glu Glu Thr Pro Val Ser Trp Lys Asp Asp Thr Glu Arg Thr Asn  
 50 55 60

Arg Leu Val Leu Ile Gly Arg Asn Leu Asp Lys Asp Ile Leu Lys Gln  
 65 70 75 80

Leu Phe Ile Ala Thr Val Thr Glu Thr Glu Lys Gln Trp Thr Thr His  
 85 90 95

Phe Lys Glu Asp Gln Val Cys Thr  
 100

<210> 103  
 <211> 1530  
 <212> DNA  
 <213> Homo sapiens

<400> 103  
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 atatataata aaaaagacat cgctagttag cactgtgtat acgacatcgc taatgaggac 180  
 accatacaag gcatcgctaa cgatgacgct gtacacaaca tcaactaatga tgacaccgta 240  
 taagacatcg ctaattatga cgctgtatac gacatcgcta atgacaccgt acaaggcacg 300  
 ctaacgagga tgctgtacac gacatcacta atgaggacag tgtacaagcc atcactaatg 360  
 aggacactgt atatggcatc gctaacgagg aactgttaca aggcattgct aacgaggacg 420  
 ctgtacacaa catcgctaata gaggacacca tataagacat caccaatgag gatgctgtat 480  
 atgacatcgc taatggcacc cacaaggcat gctaacgagg acgctgtaga cgacattgct 540  
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 gacgttgtat atgacatcgc taatgaggat gctttacaag acatagctaa tgaggttgct 660  
 gtatatgaca tcgctaataa ggacattgta tatgacatcg ctaattgagga cgctctatac 720  
 gacatcacta atgaggacgc tgtatacaac atcgctaata aggacgctgt atatggcatc 780  
 gctaattgagg atgctgtata cgaattcgct aataaggacg ctgtatatga cattgctaata 840  
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 gagaatgata cgtaccctga aataactcac ttcctgagga aaaagcgcca tctctagggg 960  
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 gttcctctgc actgggcccgt ggatgacatt acacaccttg ccaactccac ggtcctgtgt 1080  
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1530

<210> 104  
 <211> 215  
 <212> PRT  
 <213> Homo sapiens

<400> 104  
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 1 5 10 15

Met Arg Thr Leu Tyr Met Ala Ser Leu Thr Arg Thr Leu Tyr Lys Ala  
 20 25 30

Leu Leu Thr Arg Thr Leu Tyr Thr Thr Ser Leu Met Arg Thr Pro Tyr

35                      40                      45  
 Lys Thr Ser Pro Met Arg Met Leu Tyr Met Thr Ser Leu Met Ala Pro  
 50                      55                      60  
 Thr Arg His Ala Asn Glu Asp Ala Val Asp Asp Ile Ala Tyr Lys Asp  
 65                      70                      75                      80  
 Thr Val Gln Asp Ile Ala Asn Glu Asp Ala Val Tyr Asp Ile Ala Asn  
 85                      90                      95  
 Glu Asp Val Val Tyr Asp Ile Ala Asn Glu Asp Ala Leu Gln Asp Ile  
 100                      105                      110  
 Ala Asn Glu Val Ala Val Tyr Asp Ile Ala Asn Glu Asp Ile Val Tyr  
 115                      120                      125  
 Asp Ile Ala Asn Glu Asp Ala Leu Tyr Asp Ile Thr Asn Glu Asp Ala  
 130                      135                      140  
 Val Tyr Asn Ile Ala Asn Glu Asp Ala Val Tyr Gly Ile Ala Asn Glu  
 145                      150                      155                      160  
 Asp Ala Val Tyr Glu Phe Ala Asn Lys Asp Ala Val Tyr Asp Ile Ala  
 165                      170                      175  
 Asn Glu Asp Thr Val Gln Asp Ile Cys Lys Lys Glu Asp Ala Ala Asn  
 180                      185                      190  
 Glu Pro Leu Thr Leu Glu Asn Asp Thr Tyr Pro Glu Ile Thr His Phe  
 195                      200                      205  
 Leu Arg Lys Lys Arg His Leu  
 210                      215

&lt;210&gt; 105

&lt;211&gt; 2423

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 105

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 tataagaatg tgagttacat aagagaggag tcctgtcagt tegtctctg ctgtgtcccc 120  
 aagaccatga atcatggctg gcatgtagta ggcatttaat aatatatgtt caacaagtat 180  
 ttggcagtct tggagggcag aaaaggaggt ggggaagatt ttttaataac attttttaaa 240  
 aagtcacatt gtcctacaat actgattttt cttgcatatt taggaaattg aggggttttt 300  
 tctaaaacat gcggacatat gggaaatagg atgcaacatt tgcactaatg tttcagacac 360  
 agttagaggt ttccaagaga ttttgcgctg gggaggctgc ttgctacaag ctcccaaagc 420  
 tctgggagga catagtattc attcctccct cagcagaagc ggtgaggcaa gaagctctgg 480  
 ggagcaccga gcgttgact tttagcatag tgtgtcagg tttcatagtt tgggcccagg 540  
 gcacagagaa gtcacagctc tccggcatcc tgtgacctt accctctttg ccaagggaaa 600  
 atgtggccca ccaaagcaag aaacttgagg gcatgggtca cccagccctt ggcacatgcc 660  
 cagagcccga gaaggaagga acaatgatcc tccagctacc tcacgggctt ggcacaggtg 720  
 accactgccc tggcatcacc cagctgtgtc cggcagcctg aaccccatct gtggggatgc 780  
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 ccaggccaga actaccagct cttggacctt tgggtggagt agagcatagc tggcgatcat 900  
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 tgtagtccca gctactcagg aggtgtgagc aggagaattg cttggattcg ggaggtgggg 2340  
 gttttggtgg gccgagatca gccattgca ctccagactg tgcgacagag cgagactctg 2400  
 tcaaaaaaaa aaaaaaaaaa aaa 2423

&lt;210&gt; 106

&lt;211&gt; 66

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 106

Met Val Lys Leu Ser Ile Val Leu Thr Pro Gln Phe Leu Ser His Asp  
 1 5 10 15

Gln Gly Gln Leu Thr Lys Glu Leu Gln Gln His Val Lys Ser Val Thr  
 20 25 30

Cys Pro Cys Glu Tyr Leu Arg Lys Val Ser Glu Cys Arg Gln Met Gly  
 35 40 45

Pro Gly Ala Leu Glu Gln Phe Pro Gly Leu Ser Cys His Thr Ser His  
 50 55 60

Ser Arg  
 65

&lt;210&gt; 107

&lt;211&gt; 1418

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 107

cttttgggca gtttgatcac tgategagta aggaatgacc tttagattgt gcgacttttg 60  
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 catcttccca gacggagttc aaaggccact tctcaagcag cttttggcac cttcagcctc 180  
 agagtggaaat cttttaaaga caggaccctt atgtccagga aaggggaaaa ggaactttgc 240  
 caatgatagt gaccacagca aaagcaata ataataatat taataataat aaagagaaat 300  
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 cagggcctcc caggcccagc cccatgccac ctgggccccg gcatctcttt gaggttctgc 780  
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 agagcaggac cctgtctcaa aaaaaaaaaa aaaaaaaa 1418

&lt;210&gt; 108

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 108

Met Asn Arg Gly Leu Pro Val Leu Lys Ala Gln Val Phe Ile Leu Tyr  
 1 5 10 15  
 Leu Ser Arg Ala His Thr Lys Ile Gln Pro Ser Asn Lys His Asp Gly  
 20 25 30  
 Ala Val Pro Leu Pro Ala Ser Pro Val Pro Leu Ser Pro Pro Gly Leu  
 35 40 45  
 Gly Ser Ser Gly Val Gly Val Gly Arg Gly Pro Cys Pro Pro Cys Leu  
 50 55 60  
 Asp Phe Ala Pro Leu Gly Pro Ala Gly Ser Arg Pro Val Asn Val Ser  
 65 70 75 80  
 Ser Ser Gly Thr Asp Ser Val Cys Ser Trp Pro Trp Val His Leu Thr  
 85 90 95  
 Asn Ile Cys Pro Gly Pro Pro Arg Pro Ser Pro Met Pro Pro Gly Pro  
 100 105 110  
 Arg His Leu Phe Glu Val Leu Pro Met Cys Ser  
 115 120

&lt;210&gt; 109

&lt;211&gt; 1199

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 109

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 cctcgaagcg gaggatccct gtgtcccagc cgggcatggc cgacccccac cagcttttcg 120  
 atgacacaag ttcagcccag agccggggct atggggccca gcgggcacct ggtggcctga 180  
 gttatcctgc agcctctccc acgcccctg cagccttctt ggctgacctg gtgtccaaca 240  
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<210> 110

<211> 283

<212> PRT

<213> Homo sapiens

<400> 110

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Arg	Gly	Tyr	Gly	Ala	Gln	Arg	Ala	Pro	Gly	Gly	Leu	Ser	Tyr	Pro	Ala
			20					25						30	
Ala	Ser	Pro	Thr	Pro	His	Ala	Ala	Phe	Leu	Ala	Asp	Pro	Val	Ser	Asn
			35					40						45	
Met	Ala	Met	Ala	Tyr	Gly	Ser	Ser	Leu	Ala	Ala	Gln	Gly	Lys	Glu	Leu
	50					55					60				
Val	Asp	Lys	Asn	Ile	Asp	Arg	Phe	Ile	Pro	Ile	Thr	Lys	Leu	Lys	Tyr
	65				70					75					80
Tyr	Phe	Ala	Val	Asp	Thr	Met	Tyr	Val	Gly	Arg	Lys	Leu	Gly	Leu	Leu
				85					90					95	
Phe	Phe	Pro	Tyr	Leu	His	Gln	Asp	Trp	Glu	Val	Gln	Tyr	Gln	Gln	Asp
			100					105						110	
Thr	Pro	Val	Ala	Pro	Arg	Phe	Asp	Val	Asn	Ala	Pro	Asp	Leu	Tyr	Ile
			115				120					125			
Pro	Ala	Met	Ala	Phe	Ile	Thr	Tyr	Val	Leu	Val	Ala	Gly	Leu	Ala	Leu
	130					135					140				
Gly	Thr	Gln	Asp	Arg	Phe	Ser	Pro	Asp	Leu	Leu	Gly	Leu	Gln	Ala	Ser
145				150					155					160	
Ser	Ala	Leu	Ala	Trp	Leu	Thr	Leu	Glu	Val	Leu	Ala	Ile	Leu	Leu	Ser
			165					170						175	
Leu	Tyr	Leu	Val	Thr	Val	Asn	Thr	Asp	Leu	Thr	Thr	Ile	Asp	Leu	Val
			180					185					190		
Ala	Phe	Leu	Gly	Tyr	Lys	Tyr	Val	Gly	Met	Ile	Gly	Gly	Val	Leu	Met
	195						200					205			

Gly Leu Leu Phe Gly Lys Ile Gly Tyr Tyr Leu Val Leu Gly Trp Cys  
 210 215 220

Cys Val Ala Ile Phe Val Phe Met Ile Arg Thr Leu Arg Leu Lys Ile  
 225 230 235 240

Leu Ala Asp Ala Ala Ala Glu Gly Val Pro Val Arg Gly Ala Arg Asn  
 245 250 255

Gln Leu Arg Met Tyr Leu Thr Met Ala Val Ala Ala Ala Gln Pro Met  
 260 265 270

Leu Met Tyr Trp Leu Thr Phe His Leu Val Arg  
 275 280

&lt;210&gt; 111

&lt;211&gt; 2024

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 111

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 ctctagagc tgcttatcat ccagactttc caacagtctt gacagcttta gaaatagata 120  
 atgcggttgt ggcaaatagc ctaattgaca tgagaggcat agagacagtg ctactaatca 180  
 aaaataattc tgtagctcgt gcagtaatgc agtcccaaaa gccacccaaa aattgtagag 240  
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 ttgaaaataa gacgccccag atattaaatc ttcagcaaca tttatctgcc cttgaaaaag 420  
 atattaaaca caatgaggaa cttcttaaaa ggtgccaaact acattataaa gaactaaaga 480  
 tgaaaataag aaaaaatatt tctgaaattc gggaaactga gaacatagaa gaacaccagt 540  
 ctgtagatat tgcaactttg gaagatgaag ctccaggaaa taaaagcaaa atgaaaatgg 600  
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 aaccacaatc aaacatataa ataagcctgg aaaaccaact acaaccagca atttaagatt 1800  
 actattactt taagaaaaatc aatttcatag tattggtttt aaatcttttt aagttttttt 1860  
 aatacgtatc atttttatag gttctttttc agaagtaaaa ttttgtacat atatacatgt 1920  
 acatatctgt ttagtttggg ttcatttcta taacattttg taagaaaata aaagtttgag 1980  
 cacctgatta aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 2024

&lt;210&gt; 112

&lt;211&gt; 487

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 112

Met Arg Gly Ile Glu Thr Val Leu Leu Ile Lys Asn Asn Ser Val Ala  
 1 5 10 15  
 Arg Ala Val Met Gln Ser Gln Lys Pro Pro Lys Asn Cys Arg Glu Ala  
 20 25 30  
 Phe Thr Ala Asp Gly Asp Gln Val Phe Ala Gly Arg Tyr Tyr Ser Ser  
 35 40 45  
 Glu Asn Thr Arg Pro Lys Phe Leu Ser Arg Asp Val Asp Ser Glu Ile  
 50 55 60  
 Ser Asp Leu Glu Asn Glu Val Glu Asn Lys Thr Ala Gln Ile Leu Asn  
 65 70 75 80  
 Leu Gln Gln His Leu Ser Ala Leu Glu Lys Asp Ile Lys His Asn Glu  
 85 90 95  
 Glu Leu Leu Lys Arg Cys Gln Leu His Tyr Lys Glu Leu Lys Met Lys  
 100 105 110  
 Ile Arg Lys Asn Ile Ser Glu Ile Arg Glu Leu Glu Asn Ile Glu Glu  
 115 120 125  
 His Gln Ser Val Asp Ile Ala Thr Leu Glu Asp Glu Ala Gln Glu Asn  
 130 135 140  
 Lys Ser Lys Met Lys Met Val Glu Glu His Met Glu Gln Gln Lys Glu  
 145 150 155 160  
 Asn Met Glu His Leu Lys Ser Leu Lys Ile Glu Ala Glu Asn Lys Tyr  
 165 170 175  
 Asp Ala Ile Lys Phe Lys Ile Asn Gln Leu Ser Glu Leu Ala Asp Pro  
 180 185 190  
 Leu Lys Asp Glu Leu Asn Leu Ala Asp Ser Glu Val Asp Asn Gln Lys  
 195 200 205  
 Arg Gly Lys Arg His Tyr Glu Glu Lys Gln Lys Glu His Leu Asp Thr  
 210 215 220  
 Leu Asn Lys Lys Lys Arg Glu Leu Asp Met Lys Glu Lys Glu Leu Glu  
 225 230 235 240  
 Glu Lys Met Ser Gln Ala Arg Gln Ile Cys Pro Glu Arg Ile Glu Val  
 245 250 255  
 Glu Lys Ser Ala Ser Ile Leu Asp Lys Glu Ile Asn Arg Leu Arg Gln  
 260 265 270  
 Lys Ile Gln Ala Glu His Ala Ser His Gly Asp Arg Glu Glu Ile Met  
 275 280 285  
 Arg Gln Tyr Gln Glu Ala Arg Glu Thr Tyr Leu Asp Leu Asp Ser Lys  
 290 295 300



Val Arg Thr Leu Lys Lys Phe Ile Lys Leu Leu Gly Glu Ile Met Glu  
 305 310 315 320  
 His Arg Phe Lys Thr Tyr Gln Gln Phe Arg Arg Cys Leu Thr Leu Arg  
 325 330 335  
 Cys Lys Leu Tyr Phe Asp Asn Leu Leu Ser Gln Arg Ala Tyr Cys Gly  
 340 345 350  
 Lys Met Asn Phe Asp His Lys Asn Glu Thr Leu Ser Ile Ser Val Gln  
 355 360 365  
 Pro Gly Glu Gly Asn Lys Ala Ala Phe Asn Asp Met Arg Ala Leu Ser  
 370 375 380  
 Gly Gly Glu Arg Ser Phe Ser Thr Val Cys Phe Ile Leu Ser Leu Trp  
 385 390 395 400  
 Ser Ile Ala Glu Ser Pro Phe Arg Cys Leu Asp Glu Phe Asp Val Tyr  
 405 410 415  
 Met Asp Met Val Asn Arg Arg Ile Ala Met Asp Leu Ile Leu Lys Met  
 420 425 430  
 Ala Asp Ser Gln Arg Phe Arg Gln Phe Ile Leu Leu Thr Pro Gln Ser  
 435 440 445  
 Met Ser Ser Leu Pro Ser Ser Lys Leu Ile Arg Ile Leu Arg Met Ser  
 450 455 460  
 Asp Pro Glu Arg Gly Gln Thr Thr Leu Pro Phe Arg Pro Val Thr Gln  
 465 470 475 480  
 Glu Glu Asp Asp Asp Gln Arg  
 485

&lt;210&gt; 113

&lt;211&gt; 1424

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 113

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 gctgtgccc aaccccgct ctgcacttgg agatgcggac ttggacgtgg acttggactt 840  
 ggacttggat ttgagcttgg ctcttcgcag ccggacttc ggaggagtgg ggcggggcgg 900  
 gggaggggca ccacggcttt tttgtttttt gtttgtttgt ttttaatctc agccttggcg 960  
 tgagctgggg ctttctcttc ttctccagcc tctcccttcc actcttcacc cagcatcctg 1020

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ccccctgtc caaaaacagc aggacatcag acccatccca tcccaccaca ctactcacc 1080
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ctttctgcag tttctgactg taaaaaaaaa aaaaaaaaaa aaaa 1424

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&lt;210&gt; 114

&lt;211&gt; 207

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 114

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Met Gly Lys Cys Ser Gly Arg Cys Thr Leu Val Ala Phe Cys Cys Leu
  1             5             10             15

Gln Leu Val Ala Ala Leu Glu Arg Gln Ile Phe Asp Phe Leu Gly Tyr
      20             25             30

Gln Trp Ala Pro Ile Leu Ala Asn Phe Leu His Ile Met Ala Val Ile
      35             40             45

Leu Gly Ile Phe Gly Thr Val Gln Tyr Arg Ser Arg Tyr Leu Ile Leu
      50             55             60

Tyr Ala Ala Trp Leu Val Leu Trp Val Gly Trp Asn Ala Phe Ile Ile
      65             70             75             80

Cys Phe Tyr Leu Glu Val Gly Gln Leu Ser Gln Asp Arg Asp Phe Ile
      85             90             95

Met Thr Phe Asn Thr Ser Leu His Arg Ser Trp Trp Met Glu Asn Gly
      100            105            110

Pro Gly Cys Leu Val Thr Pro Val Leu Asn Ser Arg Leu Ala Leu Glu
      115            120            125

Asp His His Val Ile Ser Val Thr Gly Cys Leu Leu Asp Tyr Pro Tyr
      130            135            140

Ile Glu Ala Leu Ser Ser Ala Leu Gln Ile Phe Leu Ala Leu Phe Gly
      145            150            155            160

Phe Val Phe Ala Cys Tyr Val Ser Lys Val Phe Leu Glu Glu Glu Asp
      165            170            175

Ser Phe Asp Phe Ile Gly Gly Phe Asp Ser Tyr Gly Tyr Gln Ala Pro
      180            185            190

Gln Lys Thr Ser His Leu Gln Leu Gln Pro Leu Tyr Thr Ser Gly
      195            200            205

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&lt;210&gt; 115

&lt;211&gt; 843

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 115

ccagaatctg gcacgctgac ggggacctag ggacagacga ccgcacaaca cgccacgttg 60  
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 agcgcaaac ctcacaatcc acaccctcct aagagaacct gctctcgcca tccgcaggtc 540  
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 aaa 843

&lt;210&gt; 116

&lt;211&gt; 84

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 116

Met Gly Thr Arg Arg Pro Leu Gly Arg Leu Leu Gln Ala Gly Thr Arg  
 1 5 10 15  
 Pro Ala Arg Pro Thr Pro His Gly Arg Arg Arg Leu His Val Ser Ala  
 20 25 30  
 Pro Leu Gln Ala Gln Glu Ala Arg Gly Val Thr Trp Arg Pro Gly Pro  
 35 40 45  
 Ala Ser Pro Ala Pro Leu Arg Leu Thr Thr Tyr Pro Pro Pro Phe Phe  
 50 55 60  
 Leu Ser Lys Tyr Pro Asp Gln Ser Ile Ser Pro Arg Arg Thr Arg Thr  
 65 70 75 80  
 Ala Gly Ser Asp

&lt;210&gt; 117

&lt;211&gt; 2232

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (225)

&lt;400&gt; 117

ataagctggg aggttccctg cctgtctcct gctctctgct gagttgcttg gggcagggat 60  
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 tgaccttggg caagtgactc cccatctctg ggcctcagga ggttgggcag gtccgggcca 180  
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 gtacacctgg ggcaaaagga gcctgggcgt gggaggccag gactgggaag gttctgggac 420  
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 aaaaaaaaaa aa 2232

&lt;210&gt; 118

&lt;211&gt; 133

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (8)

&lt;400&gt; 118

Met Val Gly Glu Glu Glu Xaa Pro Asn Thr Pro Asn Pro His Leu  
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Ser Gln Pro His Ser Phe Gln Ile Leu Ala Leu Gly Val Leu Ile His  
 20 25 30

Gly Gln Val Thr Val Trp Glu Ala Glu Ala Pro Leu Gln Gly Gly Phe  
 35 40 45

Gly Ala Pro Gln Ser Thr Pro Gly Ala Lys Gly Ala Trp Ala Trp Glu  
 50 55 60

Ala Arg Thr Gly Lys Val Leu Gly Leu Ser Pro Ser Pro Arg Thr Pro  
 65 70 75 80

Pro Gln Ser Leu Gly Leu Ser Asn Ser His Asp Arg Ala Leu Val Lys  
 85 90 95

Arg Lys Leu Lys Glu Met Ala Ala Ala Glu Lys Glu Arg Lys Ala  
 100 105 110

Gln Glu Lys Ala Ala Arg Gln Arg Glu Lys Leu Arg Arg Arg Glu Gln  
 115 120 125

Glu Ala Lys Lys Ser  
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<210> 119

<211> 4086

<212> DNA

<213> Homo sapiens

<400> 119

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ctactgggta ggtcgggtac gcggcatatg tggggtatgt ttggatcca ggtatttgag 180
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gaggatactg attctggata gtaaaattgt ttggagctcg gcaatcataa gaaacttgca 300
gtttccaccc cctcttcacc tggagaactt gggctccatt aggtgcaatc gttggagtaa 360
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 4080  
 aaaaaa 4086

&lt;210&gt; 120

&lt;211&gt; 102

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 120

Met Ser Thr Gly Asn Thr Val Cys Ser Arg Tyr His Phe Tyr Val Arg  
 1 5 10 15

Val Asn Gln Ala Val Ile Trp Val Asp Val Leu Ile Tyr Trp Ser Val  
 20 25 30

His Ile Leu Asp Ile Val Ile Pro His Trp Leu Val Asn Ser Val Ser  
 35 40 45

Ile Tyr Trp Ile Ile Glu Trp Arg Leu Trp Cys Trp Trp Trp Glu Arg  
 50 55 60

Trp Trp Tyr Trp Arg Ile His Pro Ala Val Val Ala Ala Val Phe Arg  
 65 70 75 80

Ile Lys Asp Asp Arg Ser Ser Ala Pro Cys Asp Ile Gly Ile Met Cys  
 85 90 95

Ala Gln Pro Ala Asn Pro  
 100

&lt;210&gt; 121

&lt;211&gt; 1293

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 121

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aattcctaaa aagtcatgag gcaggggatt ggtttatgtt attatcatga cctgagagtc 420
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aaagcctata actaagaaaa aaaaaaaaaa aaa 1293

```

&lt;210&gt; 122

&lt;211&gt; 54

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 122

```

Met Val Arg Asn Ser Gln Gln Gly Ser Gly Gly Asn Gly Leu Thr His
  1              5              10              15

```

```

Leu Arg Leu Met Pro Gly Leu Leu Pro Ile Trp Val Ala Ser Ala Asn
      20              25              30

```

```

Asp Val Gln His Ile Gln Gly Gln Ala Gln Gly Arg Thr Ala Pro Lys
      35              40              45

```

```

Ala Lys Ile Leu Pro Ser
      50

```

&lt;210&gt; 123

&lt;211&gt; 2509

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 123

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gagctgcac gcgggaggcg catggcgggg atggcgctgg cgcgggcctg gaagcagatg 60
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gagtagaaca ggaaaatcat cctgactcat gtgtgtgtt ctttattttt aattttcaaa 420
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cagtattttc ttaacctttg tgactgtttc aatattaccc ccgtgaaagc ttttcttaat 540
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caaagttttg taaagaacaa tataagattt cgggtagggg tatggggagg gaagatattt 720
tattgagaac tacttaacaa aagatttate tgtaagcttg aactcaggag tacagtttta 780
gctatctaga ctctaacagc ttttgcttta aaattattaa agtgtttctt aatgaaaaag 840

```

```

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actgcaataa agtgaatata tcaataaaaa aaaaaaaaaa aaaaaaaaaa 2509

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&lt;210&gt; 124

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 124

```

Met Ala Gly Met Ala Leu Ala Arg Ala Trp Lys Gln Met Ser Trp Phe
  1             5             10             15

```

```

Tyr Tyr Gln Tyr Leu Leu Val Thr Ala Leu Tyr Met Leu Glu Pro Trp
      20             25             30

```

```

Glu Arg Thr Val Phe Ser Trp Phe Pro Leu Trp Gly Trp His Tyr Thr
      35             40             45

```

```

Gln Asp Thr Ser Ser Cys Pro Ser Thr Ser Trp Arg Tyr Cys Thr Thr
      50             55             60

```

```

Leu Lys Ser Tyr Asn Asp Gln Asp Ala Thr Arg Ile Arg Gly Ser Leu
      65             70             75             80

```

```

Gly Lys Thr His Pro Thr Lys Leu Glu
      85

```

&lt;210&gt; 125

&lt;211&gt; 2672

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 125



```

ggaggagaga agaggagggtg gagaaggcctt gggctcgcgc cgctgaagtc ggcttaccgg 60
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gatatgtctt aaagagctgg gaacctttgc tcaaagctcc atcgcccttc accatcagta 660
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2672

&lt;210&gt; 126

&lt;211&gt; 750

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 126

```

Met Glu Asp Leu Phe Glu Thr Phe Gln Asp Glu Met Gly Phe Ser Asn
  1                      5                      10                      15

```

```

Met Glu Asp Asp Gly Pro Glu Glu Glu Arg Val Ala Glu Pro Gln
      20                      25                      30

```

```

Ala Asn Phe Asn Thr Pro Gln Ala Leu Arg Phe Glu Glu Leu Ala
      35                      40                      45

```

Asn Leu Leu Asn Glu Gln His Gln Ile Ala Lys Glu Leu Phe Glu Gln  
 50 55 60  
 Leu Lys Met Lys Lys Pro Ser Ala Lys Gln Gln Lys Glu Val Glu Lys  
 65 70 75 80  
 Val Lys Pro Gln Cys Lys Glu Val His Gln Thr Leu Ile Leu Asp Pro  
 85 90 95  
 Ala Gln Arg Lys Arg Leu Gln Gln Gln Met Gln Gln His Val Gln Leu  
 100 105 110  
 Leu Thr Gln Ile His Leu Leu Ala Thr Cys Asn Pro Asn Leu Asn Pro  
 115 120 125  
 Glu Ala Ser Ser Thr Arg Ile Cys Leu Lys Glu Leu Gly Thr Phe Ala  
 130 135 140  
 Gln Ser Ser Ile Ala Leu His His Gln Tyr Asn Pro Lys Phe Gln Thr  
 145 150 155 160  
 Leu Phe Gln Pro Cys Asn Leu Met Gly Ala Met Gln Leu Ile Glu Asp  
 165 170 175  
 Phe Ser Thr His Val Ser Ile Asp Cys Ser Pro His Lys Thr Val Lys  
 180 185 190  
 Lys Thr Ala Asn Glu Phe Pro Cys Leu Pro Lys Gln Val Ala Trp Ile  
 195 200 205  
 Leu Ala Thr Ser Lys Val Phe Met Tyr Pro Glu Leu Leu Pro Val Cys  
 210 215 220  
 Ser Leu Lys Ala Lys Asn Pro Gln Asp Lys Ile Leu Phe Thr Lys Ala  
 225 230 235 240  
 Glu Asp Asn Leu Leu Ala Leu Gly Leu Lys His Phe Glu Gly Thr Glu  
 245 250 255  
 Phe Leu Asn Pro Leu Ile Ser Lys Tyr Leu Leu Thr Cys Lys Thr Ala  
 260 265 270  
 Arg Gln Leu Thr Val Arg Ile Lys Asn Leu Asn Met Asn Arg Ala Pro  
 275 280 285  
 Asp Asn Ile Ile Lys Phe Tyr Lys Lys Thr Lys Gln Leu Pro Val Leu  
 290 295 300  
 Gly Lys Cys Cys Glu Glu Ile Gln Pro His Gln Trp Lys Pro Pro Ile  
 305 310 315 320  
 Glu Arg Glu Glu His Arg Leu Pro Phe Trp Leu Lys Ala Ser Leu Pro  
 325 330 335  
 Ser Ile Gln Glu Glu Leu Arg His Met Ala Asp Gly Ala Arg Glu Val  
 340 345 350  
 Gly Asn Met Thr Gly Thr Thr Glu Ile Asn Ser Asp Gln Gly Leu Glu  
 355 360 365

Lys Asp Asn Ser Glu Leu Gly Ser Glu Thr Arg Tyr Pro Leu Leu Leu  
 370 375 380  
 Pro Lys Gly Val Val Leu Lys Leu Lys Pro Val Ala Asp Arg Phe Pro  
 385 390 395 400  
 Lys Lys Ala Trp Arg Gln Lys Arg Ser Ser Val Leu Lys Pro Leu Leu  
 405 410 415  
 Ile Gln Pro Ser Pro Ser Leu Gln Pro Ser Phe Asn Pro Gly Lys Thr  
 420 425 430  
 Pro Ala Gln Ser Thr His Ser Glu Ala Pro Pro Ser Lys Met Val Leu  
 435 440 445  
 Arg Ile Pro His Pro Ile Gln Pro Ala Thr Val Leu Gln Thr Val Pro  
 450 455 460  
 Gly Val Pro Pro Leu Gly Val Ser Gly Gly Glu Ser Phe Glu Ser Pro  
 465 470 475 480  
 Ala Ala Leu Pro Ala Met Pro Pro Glu Ala Arg Thr Ser Phe Pro Leu  
 485 490 495  
 Ser Glu Ser Gln Thr Leu Leu Ser Ser Ala Pro Val Pro Lys Val Met  
 500 505 510  
 Met Pro Ser Pro Ala Ser Ser Met Phe Arg Lys Pro Tyr Val Arg Arg  
 515 520 525  
 Arg Pro Ser Lys Arg Arg Gly Ala Arg Ala Phe Arg Cys Ile Lys Pro  
 530 535 540  
 Ala Pro Val Ile His Pro Ala Ser Val Ile Phe Thr Val Pro Ala Thr  
 545 550 555 560  
 Thr Val Lys Ile Val Ser Leu Gly Gly Gly Cys Asn Met Ile Gln Pro  
 565 570 575  
 Val Asn Ala Ala Val Ala Gln Ser Pro Gln Thr Ile Pro Ile Ala Thr  
 580 585 590  
 Leu Leu Val Asn Pro Thr Ser Phe Pro Cys Pro Leu Asn Gln Pro Leu  
 595 600 605  
 Val Ala Ser Ser Val Ser Pro Leu Ile Val Ser Gly Asn Ser Val Asn  
 610 615 620  
 Leu Pro Ile Pro Ser Thr Pro Glu Asp Lys Ala His Met Asn Val Asp  
 625 630 635 640  
 Ile Ala Cys Ala Val Ala Asp Gly Glu Asn Ala Phe Gln Gly Leu Glu  
 645 650 655  
 Pro Lys Leu Glu Pro Gln Glu Leu Ser Pro Leu Ser Ala Thr Val Phe  
 660 665 670  
 Pro Lys Val Glu His Ser Pro Gly Pro Pro Pro Val Asp Lys Gln Cys  
 675 680 685

Gln Glu Gly Leu Ser Glu Asn Ser Ala Tyr Arg Trp Thr Val Val Lys  
690 695 700

Thr Glu Glu Gly Arg Gln Ala Leu Glu Pro Leu Pro Gln Gly Ile Gln  
705 710 715 720

Glu Ser Leu Asn Asn Ser Ser Pro Gly Asp Leu Glu Glu Val Val Lys  
725 730 735

Met Glu Pro Glu Asp Ala Thr Glu Glu Ile Ser Gly Phe Leu  
740 745 750

<210> 127

<211> 2673

<212> DNA

<213> Homo sapiens

<400> 127

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 ttgatgtgat tgtatttcca atttcttgtt catgtaagat ttcaataaaa ctaaaaaatc 2640  
 tattcaaac aaaaaaaaaa aaaaaaaaaa aaa 2673

<210> 128

<211> 633

<212> PRT

<213> Homo sapiens

<400> 128

Met Ala Asn Gln Val Asn Gly Asn Ala Val Gln Leu Lys Glu Glu Glu  
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 Glu Pro Met Asp Thr Ser Ser Val Thr His Thr Glu His Tyr Lys Thr  
 20 25 30  
 Leu Ile Glu Ala Gly Leu Pro Gln Lys Val Ala Glu Arg Leu Asp Glu  
 35 40 45  
 Ile Phe Gln Thr Gly Leu Val Ala Tyr Val Asp Leu Asp Glu Arg Ala  
 50 55 60  
 Ile Asp Ala Leu Arg Glu Phe Asn Glu Glu Gly Ala Leu Ser Val Leu  
 65 70 75 80  
 Gln Gln Phe Lys Glu Ser Asp Leu Ser His Val Gln Asn Lys Ser Ala  
 85 90 95  
 Phe Leu Cys Gly Gly Val Met Lys Thr Tyr Arg Gln Arg Glu Lys Gln Gly  
 100 105 110  
 Ser Lys Val Gln Glu Ser Thr Lys Gly Pro Asp Glu Ala Lys Ile Lys  
 115 120 125  
 Ala Leu Leu Glu Arg Thr Gly Tyr Thr Leu Asp Val Thr Thr Gly Gln  
 130 135 140  
 Arg Lys Tyr Gly Gly Pro Pro Pro Asp Ser Val Tyr Ser Gly Val Gln  
 145 150 155 160  
 Pro Gly Ile Gly Thr Glu Val Phe Val Gly Lys Ile Pro Arg Asp Leu  
 165 170 175  
 Tyr Glu Asp Glu Leu Val Pro Leu Phe Glu Lys Ala Gly Pro Ile Trp  
 180 185 190  
 Asp Leu Arg Leu Met Met Asp Pro Leu Ser Gly Gln Asn Arg Gly Tyr  
 195 200 205  
 Ala Phe Ile Thr Phe Cys Gly Lys Glu Ala Ala Gln Glu Ala Val Lys  
 210 215 220  
 Leu Cys Asp Ser Tyr Glu Ile Arg Pro Gly Lys His Leu Gly Val Cys  
 225 230 235 240  
 Ile Ser Val Ala Asn Asn Arg Leu Phe Val Gly Ser Ile Pro Lys Asn  
 245 250 255

Lys Thr Lys Glu Asn Ile Leu Glu Glu Phe Ser Lys Val Thr Glu Gly  
 260 265 270  
 Leu Val Asp Val Ile Leu Tyr His Gln Pro Asp Asp Lys Lys Lys Asn  
 275 280 285  
 Arg Gly Phe Cys Phe Leu Glu Tyr Glu Asp His Lys Ser Ala Ala Gln  
 290 295 300  
 Ala Arg Arg Arg Leu Met Ser Gly Lys Val Lys Val Trp Gly Asn Val  
 305 310 315 320  
 Val Thr Val Glu Trp Ala Asp Pro Val Glu Glu Pro Asp Pro Glu Val  
 325 330 335  
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 340 345 350  
 Thr Glu Glu Ile Leu Glu Lys Ser Phe Ser Glu Phe Gly Lys Leu Glu  
 355 360 365  
 Arg Val Lys Lys Leu Lys Asp Tyr Ala Phe Val His Phe Glu Asp Arg  
 370 375 380  
 Gly Ala Ala Val Lys Ala Met Asp Glu Met Asn Gly Lys Glu Ile Glu  
 385 390 395 400  
 Gly Glu Glu Ile Glu Ile Val Leu Ala Lys Pro Pro Asp Lys Lys Arg  
 405 410 415  
 Lys Glu Arg Gln Ala Ala Arg Gln Ala Ser Arg Ser Thr Ala Tyr Glu  
 420 425 430  
 Asp Tyr Tyr Tyr His Pro Pro Pro Arg Met Pro Pro Pro Ile Arg Gly  
 435 440 445  
 Arg Gly Arg Gly Gly Gly Arg Gly Gly Tyr Gly Tyr Pro Pro Asp Tyr  
 450 455 460  
 Tyr Gly Tyr Glu Asp Tyr Tyr Asp Asp Tyr Tyr Gly Tyr Asp Tyr His  
 465 470 475 480  
 Asp Tyr Arg Gly Gly Tyr Glu Asp Pro Tyr Tyr Gly Tyr Asp Asp Gly  
 485 490 495  
 Tyr Ala Val Arg Gly Arg Gly Gly Gly Arg Gly Gly Arg Gly Ala Pro  
 500 505 510  
 Pro Pro Pro Arg Gly Arg Gly Ala Pro Pro Pro Arg Gly Arg Ala Gly  
 515 520 525  
 Tyr Ser Gln Arg Gly Ala Pro Leu Gly Pro Pro Arg Gly Ser Arg Gly  
 530 535 540  
 Gly Arg Gly Gly Pro Ala Gln Gln Gln Arg Gly Arg Gly Ser Arg Gly  
 545 550 555 560  
 Ser Arg Gly Asn Arg Gly Gly Asn Val Gly Gly Lys Arg Lys Ala Asp  
 565 570 575

Gly Tyr Asn Gln Pro Asp Ser Lys Arg Arg Gln Thr Asn Asn Gln Gln  
580 585 590

Asn Trp Gly Ser Gln Pro Ile Ala Gln Gln Pro Leu Gln Gln Gly Gly  
595 600 605

Asp Tyr Ser Gly Asn Tyr Gly Tyr Asn Asn Asp Asn Gln Glu Phe Tyr  
610 615 620

Gln Asp Thr Tyr Gly Gln Gln Trp Lys  
625 630

&lt;210&gt; 129

&lt;211&gt; 938

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 129

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aatacaacag aaaattgcaa aaaaaaaaaa aaaaaaaaaa 938

&lt;210&gt; 130

&lt;211&gt; 244

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 130

Met Ile Phe Thr Gln Ser Ser Glu Lys Thr Ala Val Ser Cys Leu Ser  
1 5 10 15

Gln Asn Asp Trp Lys Leu Asp Val Ala Thr Asp Asn Phe Phe Gln Asn  
20 25 30

Pro Glu Leu Tyr Ile Arg Glu Ser Val Lys Gly Ser Leu Asp Arg Lys  
35 40 45

Lys Leu Glu Gln Leu Tyr Asn Arg Tyr Gln Asp Pro Gln Asp Glu Asn  
50 55 60

Lys Ile Gly Ile Asp Gly Ile Gln Gln Phe Cys Asp Asp Leu Ala Leu  
65 70 75 80

Asp Pro Ala Ser Ile Ser Val Leu Ile Ile Ala Trp Lys Phe Arg Ala  
85 90 95

Ala Thr Gln Cys Glu Phe Ser Lys Gln Glu Phe Met Asp Gly Met Thr  
 100 105 110

Glu Leu Gly Cys Asp Ser Ile Glu Lys Leu Lys Ala Gln Ile Pro Lys  
 115 120 125

Met Glu Gln Glu Leu Lys Glu Pro Gly Arg Phe Lys Asp Phe Tyr Gln  
 130 135 140

Phe Thr Phe Asn Phe Ala Lys Asn Pro Gly Gln Lys Gly Leu Asp Leu  
 145 150 155 160

Glu Met Ala Ile Ala Tyr Trp Asn Leu Val Leu Asn Gly Arg Phe Lys  
 165 170 175

Phe Leu Asp Leu Trp Asn Lys Phe Leu Leu Glu His His Lys Arg Ser  
 180 185 190

Ile Pro Lys Asp Thr Trp Asn Leu Leu Leu Asp Phe Ser Thr Met Ile  
 195 200 205

Ala Asp Asp Met Ser Asn Tyr Asp Glu Glu Gly Ala Trp Pro Val Phe  
 210 215 220

Ile Asp Asp Phe Val Glu Phe Ala Arg Pro Gln Ile Ala Gly Thr Lys  
 225 230 235 240

Ser Thr Thr Val

&lt;210&gt; 131

&lt;211&gt; 5170

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 131

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 aatatgtatt attttattta acactttttt aataaaatct ttattataaa ccatgaaaaa 5160  
 aaaaaaaaaa 5170

<210> 132  
 <211> 695  
 <212> PRT  
 <213> Homo sapiens

<400> 132  
 Met Leu Leu Trp Ile Leu Leu Leu Glu Thr Ser Leu Cys Phe Ala Ala  
 1 5 10 15  
 Gly Asn Val Thr Gly Asp Val Cys Lys Glu Lys Ile Cys Ser Cys Asn  
 20 25 30  
 Glu Ile Glu Gly Asp Leu His Val Asp Cys Glu Lys Lys Gly Phe Thr  
 35 40 45  
 Ser Leu Gln Arg Phe Thr Ala Pro Thr Ser Gln Phe Tyr His Leu Phe  
 50 55 60  
 Leu His Gly Asn Ser Leu Thr Arg Leu Phe Pro Asn Glu Phe Ala Asn  
 65 70 75 80  
 Phe Tyr Asn Ala Val Ser Leu His Met Glu Asn Asn Gly Leu His Glu  
 85 90 95  
 Ile Val Pro Gly Ala Phe Leu Gly Leu Gln Leu Val Lys Arg Leu His  
 100 105 110  
 Ile Asn Asn Asn Lys Ile Lys Ser Phe Arg Lys Gln Thr Phe Leu Gly  
 115 120 125  
 Leu Asp Asp Leu Glu Tyr Leu Gln Ala Asp Phe Asn Leu Leu Arg Asp  
 130 135 140  
 Ile Asp Pro Gly Ala Phe Gln Asp Leu Asn Lys Leu Glu Val Leu Ile  
 145 150 155 160  
 Leu Asn Asp Asn Leu Ile Ser Thr Leu Pro Ala Asn Val Phe Gln Tyr  
 165 170 175  
 Val Pro Ile Thr His Leu Asp Leu Arg Gly Asn Arg Leu Lys Arg Cys  
 180 185 190  
 Pro Met Arg Ser Leu Gly Ala Asn Pro Trp Tyr Cys Gly Asp Pro Ala  
 195 200 205  
 Arg Asp Asn Pro Trp Asp Cys Thr Cys Asp Leu Leu Ser Leu Lys Glu  
 210 215 220  
 Trp Leu Glu Asn Ile Pro Lys Asn Ala Leu Ile Gly Arg Val Val Cys  
 225 230 235 240  
 Glu Ala Pro Thr Arg Leu Gln Gly Lys Asp Leu Asn Glu Thr Thr Glu  
 245 250 255  
 Gln Asp Leu Cys Pro Leu Lys Asn Arg Val Asp Ser Ser Leu Pro Ala

260	265	270
Pro Pro Ala Gln Glu Glu Thr Phe Ala Pro Gly Pro Leu Pro Thr Pro		
275	280	285
Phe Lys Thr Asn Gly Gln Glu Asp His Ala Thr Pro Gly Ser Ala Pro		
290	295	300
Asn Gly Gly Thr Lys Ile Pro Gly Asn Trp Gln Ile Lys Ile Arg Pro		
305	310	315
Thr Ala Ala Ile Ala Thr Gly Ser Ser Arg Asn Lys Pro Leu Ala Asn		
325	330	335
Ser Leu Pro Cys Pro Gly Gly Cys Ser Cys Asp His Ile Pro Gly Ser		
340	345	350
Gly Leu Lys Met Asn Cys Asn Asn Arg Asn Val Ser Ser Leu Ala Asp		
355	360	365
Leu Lys Pro Lys Leu Ser Asn Val Gln Glu Leu Phe Leu Arg Asp Asn		
370	375	380
Lys Ile His Ser Ile Arg Lys Ser His Phe Val Asp Tyr Lys Asn Leu		
385	390	395
Ile Leu Leu Asp Leu Gly Asn Asn Asn Ile Ala Thr Val Glu Asn Asn		
405	410	415
Thr Phe Lys Asn Leu Leu Asp Leu Arg Trp Leu Tyr Met Asp Ser Asn		
420	425	430
Tyr Leu Asp Thr Leu Ser Arg Glu Lys Phe Ala Gly Leu Gln Asn Leu		
435	440	445
Glu Tyr Leu Asn Val Glu Tyr Asn Ala Ile Gln Leu Ile Leu Pro Gly		
450	455	460
Thr Phe Asn Ala Met Pro Lys Leu Arg Ile Leu Ile Leu Asn Asn Asn		
465	470	475
Leu Leu Arg Ser Leu Pro Val Asp Val Phe Ala Gly Val Ser Leu Ser		
485	490	495
Lys Leu Ser Leu His Asn Asn Tyr Phe Met Tyr Leu Pro Val Ala Gly		
500	505	510
Val Leu Asp Gln Leu Thr Ser Ile Ile Gln Ile Asp Leu His Gly Asn		
515	520	525
Pro Trp Glu Cys Ser Cys Thr Ile Val Pro Phe Lys Gln Trp Ala Glu		
530	535	540
Arg Leu Gly Ser Glu Val Leu Met Ser Asp Leu Lys Cys Glu Thr Pro		
545	550	555
Val Asn Phe Phe Arg Lys Asp Phe Met Leu Leu Ser Asn Asp Glu Ile		
565	570	575
Cys Pro Gln Leu Tyr Ala Arg Ile Ser Pro Thr Leu Thr Ser His Ser		

580

585

590

Lys Asn Ser Thr Gly Leu Ala Glu Thr Gly Thr His Ser Asn Ser Tyr  
595 600 605

Leu Asp Thr Ser Arg Val Ser Ile Ser Val Leu Val Pro Gly Leu Leu  
610 615 620

Leu Val Phe Val Thr Ser Ala Phe Thr Val Val Gly Met Leu Val Phe  
625 630 635 640

Ile Leu Arg Asn Arg Lys Arg Ser Lys Arg Arg Asp Ala Asn Ser Ser  
645 650 655

Ala Ser Glu Ile Asn Ser Leu Gln Thr Val Cys Asp Ser Ser Tyr Trp  
660 665 670

His Asn Gly Pro Tyr Asn Ala Asp Gly Ala His Arg Val Tyr Asp Cys  
675 680 685

Gly Ser His Ser Leu Ser Asp  
690 695

&lt;210&gt; 133

&lt;211&gt; 1564

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 133

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aaaa 1564

&lt;210&gt; 134

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 134

Met Leu Trp Trp Leu Val Leu Leu Leu Leu Pro Thr Leu Lys Ser Val  
 1 5 10 15

Phe Cys Ser Leu Val Thr Ser Leu Tyr Leu Pro Asn Thr Glu Asp Leu  
 20 25 30

Ser Leu Trp Leu Trp Pro Lys Pro Asp Leu His Ser Gly Thr Arg Thr  
 35 40 45

Glu Val Ser Thr His Thr Val Pro Ser Lys Pro Gly Thr Ala Ser Pro  
 50 55 60

Cys Trp Pro Leu Ala Gly Ala Val Pro Ser Pro Thr Val Ser Arg Leu  
 65 70 75 80

Glu Ala Leu Thr Arg Ala Val Gln Val Ala Glu Pro Leu Gly Ser Cys  
 85 90 95

Gly Phe Gln Gly Gly Pro Cys Pro Gly Arg Arg Arg Asp  
 100 105

&lt;210&gt; 135

&lt;211&gt; 839

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 135

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&lt;210&gt; 136

&lt;211&gt; 250

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 136

Met Ala Ala Ala Gly Leu Ala Leu Leu Cys Arg Arg Val Ser Ser Ala  
 1 5 10 15

Leu Lys Ser Ser Arg Ser Leu Ile Thr Pro Gln Val Pro Ala Cys Thr  
 20 25 30

Gly Phe Phe Leu Ser Leu Leu Pro Lys Ser Thr Pro Asn Val Thr Ser

35                                      40                                      45  
 Phe His Gln Tyr Arg Leu Leu His Thr Thr Leu Ser Arg Lys Gly Leu  
     50                                      55                                      60  
 Glu Glu Phe Phe Asp Asp Pro Lys Asn Trp Gly Gln Glu Lys Val Lys  
     65                                      70                                      75                                      80  
 Ser Gly Ala Ala Trp Thr Cys Gln Gln Leu Arg Asn Lys Ser Asn Glu  
                                     85                                      90                                      95  
 Asp Leu His Lys Leu Trp Tyr Val Leu Leu Lys Glu Arg Asn Met Leu  
                                     100                                      105                                      110  
 Leu Thr Leu Glu Gln Glu Ala Lys Arg Gln Arg Leu Pro Met Pro Ser  
                                     115                                      120                                      125  
 Pro Glu Arg Leu Asp Lys Val Val Asp Ser Met Asp Ala Leu Asp Lys  
                                     130                                      135                                      140  
 Val Val Gln Glu Arg Glu Asp Ala Leu Arg Leu Leu Gln Thr Gly Gln  
     145                                      150                                      155                                      160  
 Glu Arg Ala Arg Pro Gly Ala Trp Arg Arg Asp Ile Phe Gly Arg Ile  
                                     165                                      170                                      175  
 Ile Trp His Lys Phe Lys Gln Trp Val Ile Pro Trp His Leu Asn Lys  
                                     180                                      185                                      190  
 Arg Tyr Asn Arg Lys Arg Phe Phe Ala Leu Pro Tyr Val Asp His Phe  
                                     195                                      200                                      205  
 Leu Arg Leu Glu Arg Glu Lys Arg Ala Arg Ile Lys Ala Arg Lys Glu  
                                     210                                      215                                      220  
 Asn Leu Glu Arg Lys Lys Ala Lys Ile Leu Leu Lys Lys Phe Pro His  
     225                                      230                                      235                                      240  
 Leu Ala Glu Ala Gln Lys Ser Ser Leu Val  
                                     245                                      250

&lt;210&gt; 137

&lt;211&gt; 1067

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 137

gacaaagga gaaaaacaac aggaagcagc ttacaaactc ggtgaacaac tgagggaacc 60  
 aaaccagaga cgcgctgaac agagagaatc aggtctaaag caagtggaag tgggcagaga 120  
 ttccaccagg actggtgcaa ggcgcagagc cagccagatt tgagaagaag gcaaaaagat 180  
 gctggggagc agagctgtaa tgctgctgtt gctgctgccc tggacagctc agggcagagc 240  
 tgtgcctggg ggcagcagcc ctgcctggac tcagtgccag cagctttcac agaagctctg 300  
 cacactggcc tggagtgcac atccactagt gggacacatg gatctaagag aagagggaga 360  
 tgaagagact acaaatgatg ttccccatat ccagtgtgga gatggctgtg accccaagg 420  
 actcagggac aacagtcagt tctgcttgca aaggatccac cagggctctg ttttttatga 480  
 gaagctgcta ggatcggaata ttttcacagg ggagccttct ctgctccctg atagccctgt 540  
 gggccagctt catgcctccc tactgggctt cagccaactc ctgcagcctg agggcaccac 600  
 ctgggagact cagcagattc caagcctcag tcccagccag ccatggcagc gtctccttct 660  
 ccgcttcaaa atccttcgca gcctccaggc ctttgtggct gtagccgccc gggctcttgc 720

ccatggagca gcaaccctga gtcacctaaag gcagcagctc aaggatggca ctcagatctc 780  
 catggcccag caaggccaag ataaatctac caccacaggc acctgtgagc caacagggtta 840  
 attagtccat taatttttagt gggacctgca tatgttgaaa attaccaata ctgactgaca 900  
 tgtgatgctg acctatgata aggttgagta tttattagat gggaagggaa atttggggat 960  
 tatttatcct cctggggaca gtttggggag gattatttat tgtatttata ttgaattatg 1020  
 tacttttttc aataaagtct tatttttgtg gcaaaaaaaa aaaaaaa 1067

&lt;210&gt; 138

&lt;211&gt; 189

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 138

Met Leu Gly Ser Arg Ala Val Met Leu Leu Leu Leu Leu Pro Trp Thr  
 1 5 10 15

Ala Gln Gly Arg Ala Val Pro Gly Gly Ser Ser Pro Ala Trp Thr Gln  
 20 25 30

Cys Gln Gln Leu Ser Gln Lys Leu Cys Thr Leu Ala Trp Ser Ala His  
 35 40 45

Pro Leu Val Gly His Met Asp Leu Arg Glu Glu Gly Asp Glu Glu Thr  
 50 55 60

Thr Asn Asp Val Pro His Ile Gln Cys Gly Asp Gly Cys Asp Pro Gln  
 65 70 75 80

Gly Leu Arg Asp Asn Ser Gln Phe Cys Leu Gln Arg Ile His Gln Gly  
 85 90 95

Leu Ile Phe Tyr Glu Lys Leu Leu Gly Ser Asp Ile Phe Thr Gly Glu  
 100 105 110

Pro Ser Leu Leu Pro Asp Ser Pro Val Gly Gln Leu His Ala Ser Leu  
 115 120 125

Leu Gly Leu Ser Gln Leu Leu Gln Pro Glu Gly His His Trp Glu Thr  
 130 135 140

Gln Gln Ile Pro Ser Leu Ser Pro Ser Gln Pro Trp Gln Arg Leu Leu  
 145 150 155 160

Leu Arg Phe Lys Ile Leu Arg Ser Leu Gln Ala Phe Val Ala Val Ala  
 165 170 175

Ala Arg Val Phe Ala His Gly Ala Ala Thr Leu Ser Pro  
 180 185

&lt;210&gt; 139

&lt;211&gt; 1785

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 139

gcccaggaga ctcccctccc accagcctgg cccccagagt gctgactggc aacaatatc 60  
 caagttaaaa tagtttgcta aatagttata caattagttt acaattcaaa tatatcagag 120  
 gaaaagacag ggaaaaaaat tctaagatac atgaatccca gaccattgct ctccaaatat 180  
 ttccaagtga ttcattctct ttatttaaaa aatgaattaa ccaccagatg ggacactcat 240

acattcctga tgggtttagg aatcagtaga ccctgtatgg aaagcaatag gataatattt 300  
 cataggatca aattaaaatg ttcacagcat tgggtccagg aaattggcct ctggagaatt 360  
 tatactccag aaacaattca acaaaagaac acagctctgt gcatgcagat gctcattagc 420  
 ccatcaccta gagtaaggga aagtggagat cccaatgaac aacaatgaga tgggttagcg 480  
 aactgtgacc tatcagccca atggacattt aagcaatcac tgaaaagtag aaacatgaag 540  
 atattacaca acatggaaac tgtttatgga gtatatttag gtaaaaagga aaaaaaggca 600  
 gaactgtata tctgtggttg gatatacttt ttttttttaa tattaagcac caaccaaag 660  
 aagaaaggag gatagaaaaa ataaaatgga agatgtaggg tgggcagatt agggctgcgt 720  
 ttgttgcttg ctttcattgt accatcatag cgtttttgcc acttacaaag gaggaaaaaa 780  
 atcaattctg tgccaacca gacaacagag acctgagtgg ggggtgggaa gagagatttt 840  
 tcagcacaga atcagactcc ttctccaaag agctgtgtgg cttcacctg caaggcgacc 900  
 tcttcacaa gcagaggcca ggacaaaaag aggcacctgt gagcgacaaa gacggtttcc 960  
 ttggtttccc tcacggcgcc aagcggagtg gccgcctccc accacagggc cccctaattg 1020  
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 gcatttcag aacaggaggt ttcatcattc ctagecgttag cgacagaatg gtgacagaag 1140  
 ctctgtggac gtattttcca gcgttcagtt cacatcaagg atgggtatgc actggcgaa 1200  
 aagggcctca ggaggaagca ctcatcttta acaagacctg ctttctcagg actgcaaaca 1260  
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 agaactcacc atgtcagaga gcttcatta atacagttgc ttcaaaacca ataggcagaa 1380  
 cccaaagtaa tggatgactc accaggactt ttagcagcta atggagtact ctgagaaatg 1440  
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 atcacttacc caccgccacc ctctacttct agttccaccat cagcatcttt agctcttcta 1560  
 atttttgcca aagctgaatg cagttcttcc ccaattttct tatatcattt taagtattat 1620  
 atatgtatc ttaccaggcc cactcagaga aacagcactt atcttttaaa ttatttttta 1680  
 actactcccc acagcctacg gccataaaaa actctgtaaa ctatgttaaa tataccaaag 1740  
 taaagtttcc agaattcaca gaaaaaaaaa aaaaaaaaaa aaaaaa 1785

&lt;210&gt; 140

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 140

Met Gly Ala Phe Val Leu Arg Gly Arg Gly Thr Ser Leu Glu Gly Ala  
 1 5 10 15

Gly Ala Lys Gly Lys Cys Ile Ser Arg Thr Gly Gly Phe Ile Ile Pro  
 20 25 30

Ser Val Ser Asp Arg Met Val Thr Glu Ala Leu Trp Thr Tyr Phe Pro  
 35 40 45

Ala Phe Ser Ser His Gln Gly Trp Val Cys Thr Gly Gly Lys Gly Pro  
 50 55 60

Gln Glu Glu Ala Leu Ile Phe Asn Lys Thr Cys Phe Leu Arg Thr Ala  
 65 70 75 80

Asn Lys Arg Lys Ala Gln  
 85

&lt;210&gt; 141

&lt;211&gt; 947

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 141

caaaactgaag gtaggatgtc tatataccct tcatttcagg ggcccctaga gaatatacct 60  
 tagctttccc tcttcgggca tcctggaaag tggatacctg tggccttctt ttcactttga 120



```

aagcttacac cctcattttg actacaacta atactaaaag cttggcatct tgcttgagat 180
tagtggtttgc tatgccaac accttctcct ctttctattg aaagcaaac ataggaaaat 240
aatttgaat acttttaagg catcttaaaa acatgacttt ttcatcttat ggaaaagcag 300
accaattttg ctttttttc ccaacttggt ctcagactg tgccaataaa atgtgttcat 360
agcaggaaaa tttggaaaat acagaaaagc actatgaaga aaacaaaatg tacccaaaat 420
cccatcactc agataacatc actgttaatg ttttgatatg tatttccagt cttttctatt 480
gtgttaattt ttcattttgt ttttgaataa ataactttca ggaaagaaat tgagcctttt 540
ctgccacctc tgaagcctga ttactgtgtg aagcaggcca tgaaggccat cctcactgac 600
cagcccatga tctgactcc cgcctcatg tacatcgtga ctttcatgaa gagcatccta 660
ccatttgaag cagttgtgtg catgtatcgg ttcctaggag cggacaagtg tatgtacccc 720
tttattgctc aaagaaagca agccacaaac aataatgaag caaaaaatgg aatctaagaa 780
tctttttgta tggaatatta cttctatcag aagatgatca agatgtttca gtccagtgc 840
catcagcatt gctgacattt tatggattct aaacttgtgt tgtttctttt ttaaatcaac 900
tttttaaaaa aataaagtgt aaattaaccg aaaaaaaaa aaaaaaa 947

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&lt;210&gt; 142

&lt;211&gt; 65

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 142

```

Met Lys Ala Ile Leu Thr Asp Gln Pro Met Ile Cys Thr Pro Arg Leu
  1             5             10             15

```

```

Met Tyr Ile Val Thr Phe Met Lys Ser Ile Leu Pro Phe Glu Ala Val
      20             25             30

```

```

Val Cys Met Tyr Arg Phe Leu Gly Ala Asp Lys Cys Met Tyr Pro Phe
      35             40             45

```

```

Ile Ala Gln Arg Lys Gln Ala Thr Asn Asn Asn Glu Ala Lys Asn Gly
      50             55             60

```

Ile

65

&lt;210&gt; 143

&lt;211&gt; 1148

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 143

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gcgagatccc tacgcagta tccgcctctg ccgccgcgga gcttcccga cctcttcagc 60
cgcccgaggc cgctcccga gcccgccgt agaggctgca atcgagccg ggagcccga 120
gcccgcgccc cgagcccgcc gccgcccttc gagggcgccc caggccgcgc catggtgaag 180
gtgacgttca actccgctct ggcccagaag gagggcaaga aggacgagcc caagagcggc 240
gaggaggcgc tcatcatccc ccccagcgc gtcgcggtg actgcaagga cccagatgat 300
gtggtaccag ttggccaaag aagagcctgg tgttgggtgca tgtgctttg actagcattt 360
atgcttgacg gtgttattct aggaggagca tacttgtaca aatattttgc acttcaacca 420
gatgacgtgt actactgtgg aataaagtac atcaaagatg atgtcatctt aaatgagccc 480
tctgcagatg cccagctgc tctctaccag acaattgaag aaaatattaa aatctttgaa 540
gaagaagaag ttgaatttat cagtgtgcct gtcccagagt ttgcagatag tgatcctgcc 600
aacattgttc atgactttta caagaaactt acagcctatt tagatcttaa cctggataag 660
tgctatgtga tccctctgaa cacttccatt gttatgccac ccagaaacct actggagtta 720
cttattaaca tcaaggctgg aacctatttg cctcagtcct atctgattca tgagcacatg 780
gttattactg atcgacattg aaacattgat cacctggggt tctttattta tcgactgtgt 840
catgacaagg aaacttacia actgcaacgc agagaaacta ttaaaggat tcagaaacgt 900
gaagccagca attgtttcgc aattcggcat tttgaaaaca aatttgccgt ggaaacttta 960
attgtttctt gaacagtcaa gaaaaacatt attgaggaaa attaatatca cagcataacc 1020

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ccacccttta cattttgtgc agtgattatt ttttaaagtc ttctttcatg taagtagcaa 1080  
 acagggtttt actatcttct catctcatta attcaattaa aaccattacc ttaaaaaaaaa 1140  
 aaaaaaaaa 1148

<210> 144  
 <211> 266  
 <212> PRT  
 <213> Homo sapiens

<400> 144  
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 1 5 10 15  
 Lys Asp Glu Pro Lys Ser Gly Glu Glu Ala Leu Ile Ile Pro Pro Asp  
 20 25 30  
 Ala Val Ala Val Asp Cys Lys Asp Pro Asp Asp Val Val Pro Val Gly  
 35 40 45  
 Gln Arg Arg Ala Trp Cys Trp Cys Met Cys Phe Gly Leu Ala Phe Met  
 50 55 60  
 Leu Ala Gly Val Ile Leu Gly Gly Ala Tyr Leu Tyr Lys Tyr Phe Ala  
 65 70 75 80  
 Leu Gln Pro Asp Asp Val Tyr Tyr Cys Gly Ile Lys Tyr Ile Lys Asp  
 85 90 95  
 Asp Val Ile Leu Asn Glu Pro Ser Ala Asp Ala Pro Ala Ala Leu Tyr  
 100 105 110  
 Gln Thr Ile Glu Glu Asn Ile Lys Ile Phe Glu Glu Glu Glu Val Glu  
 115 120 125  
 Phe Ile Ser Val Pro Val Pro Glu Phe Ala Asp Ser Asp Pro Ala Asn  
 130 135 140  
 Ile Val His Asp Phe Asn Lys Lys Leu Thr Ala Tyr Leu Asp Leu Asn  
 145 150 155 160  
 Leu Asp Lys Cys Tyr Val Ile Pro Leu Asn Thr Ser Ile Val Met Pro  
 165 170 175  
 Pro Arg Asn Leu Leu Glu Leu Leu Ile Asn Ile Lys Ala Gly Thr Tyr  
 180 185 190  
 Leu Pro Gln Ser Tyr Leu Ile His Glu His Met Val Ile Thr Asp Arg  
 195 200 205  
 Ile Glu Asn Ile Asp His Leu Gly Phe Phe Ile Tyr Arg Leu Cys His  
 210 215 220  
 Asp Lys Glu Thr Tyr Lys Leu Gln Arg Arg Glu Thr Ile Lys Gly Ile  
 225 230 235 240  
 Gln Lys Arg Glu Ala Ser Asn Cys Phe Ala Ile Arg His Phe Glu Asn  
 245 250 255  
 Lys Phe Ala Val Glu Thr Leu Ile Cys Ser  
 260 265

<210> 145  
 <211> 1353  
 <212> DNA  
 <213> Homo sapiens

<400> 145  
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 caactgacct gccctattcc tggtgatct catgctgctg aagttcaagg cgctggacac 180  
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 tccgaagaag gtgaaaagaa gccaggatga ttggcacctc ctctctctcc tcctcttctt 480  
 cctcttccct tgcccagccc cctcctgtgc gtgtgtttca gacaacacag gagccagcac 540  
 aggagtggaa aatcctgcag cgcaactcag ctccagccac agaagccttg ggaatggcct 600  
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 agaagcagcc tgcctcctag ttatcatgtc tgatgaggtc tagctcagga aggaattcca 1260  
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 aaataatgca gcaaaaaaaaa aaaaaaaaaa aaa 1353

<210> 146  
 <211> 113  
 <212> PRT  
 <213> Homo sapiens

<400> 146  
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 Asn Ile Met Thr Trp Gly Leu Gln His Pro Ser Ser Lys Pro Phe Pro  
 20 25 30  
 Lys Lys Val Lys Arg Ser Gln Asp Asp Trp His Leu Leu Leu Leu  
 35 40 45  
 Leu Phe Phe Leu Phe Pro Cys Pro Ala Pro Ser Cys Ala Cys Val Ser  
 50 55 60  
 Asp Asn Thr Gly Ala Ser Thr Gly Val Glu Asn Pro Ala Ala Gln Leu  
 65 70 75 80  
 Ser Ser Ala His Arg Ser Leu Gly Asn Gly Leu Ser Leu Cys Asn Lys  
 85 90 95  
 Lys Ile Phe Phe Phe Phe Leu Asn Leu His Tyr Ile Phe Phe Asp Cys  
 100 105 110  
 Leu

<210> 147  
<211> 2312  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> (2224)

<220>  
<221> unsure  
<222> (2236)

<400> 147  
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cccgcctcca agcgcgcccc gagcagcccc gtggctaagc cgggtcctgt caagacgtc 180  
actcgaaga aaaacaagaa gaaaaaaagg ttttgaaaa gcaaggcgcg ggaagtaagc 240  
aagaagccag caagcggccc cgggtgctgt gtgcgacctc caaaggcacc agaagacttt 300  
tctcaaaact ggaaggcgt gcaagagtgg ctgctgaac aaaaatctca ggccccagaa 360  
aagcctcttg tcatctctca gatgggttcc aaaaagaagc caaaatttat ccagcaaac 420  
aaaaaagaga cctcgcctca agtgaaggga gaggagatgc cggcaggaaa agaccaggag 480  
gccagcaggg gctctgttcc ttcagggttcc aagatggaca ggaggcgcgc agtacctcgc 540  
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gccccaccca ccgaggaaga catctggttt gacgacgtgg acccagcgga tategaagct 720  
gccataggtc cagagggcgc caagatagcg aggaacagtg tgggtcagag cgagggcagc 780  
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gctctgcata atgacctaaa ggtactattt cttgatcatc caaaaaagaa gattcgggac 1140  
acacagaaat ataaaccttt caagagtcaa gtaaagagtg gaaggccgtc tctgagacta 1200  
ctttcagaga agatccttgg gctccaggtc cagcaggcgc agcactgttc aattcaggat 1260  
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gcaccttct ctcgaggagc cacatcttcc tcctttgtgt taggggacat aacaagctct 1800  
gctgggcttg agggaccag accaggtgtc tgcagtcagc tcctgagaca cagctggccc 1860  
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ggacggagtc caaggcgtta ttggccacc tgacagctgg acagaaaagg ggcagacaca 2220  
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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 2312

<210> 148  
<211> 422  
<212> PRT

<213> Homo sapiens

<400> 148  
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 Val Ala Lys Pro Gly Pro Val Lys Thr Leu Thr Arg Lys Lys Asn Lys  
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 Lys Lys Lys Arg Phe Trp Lys Ser Lys Ala Arg Glu Val Ser Lys Lys  
 35 40 45  
 Pro Ala Ser Gly Pro Gly Ala Val Val Arg Pro Pro Lys Ala Pro Glu  
 50 55 60  
 Asp Phe Ser Gln Asn Trp Lys Ala Leu Gln Glu Trp Leu Leu Lys Gln  
 65 70 75 80  
 Lys Ser Gln Ala Pro Glu Lys Pro Leu Val Ile Ser Gln Met Gly Ser  
 85 90 95  
 Lys Lys Lys Pro Lys Ile Ile Gln Gln Asn Lys Lys Glu Thr Ser Pro  
 100 105 110  
 Gln Val Lys Gly Glu Glu Met Pro Ala Gly Lys Asp Gln Glu Ala Ser  
 115 120 125  
 Arg Gly Ser Val Pro Ser Gly Ser Lys Met Asp Arg Arg Ala Pro Val  
 130 135 140  
 Pro Arg Thr Lys Ala Ser Gly Thr Glu His Asn Lys Lys Gly Thr Lys  
 145 150 155 160  
 Glu Arg Thr Asn Gly Asp Ile Val Pro Glu Arg Gly Asp Ile Glu His  
 165 170 175  
 Lys Lys Arg Lys Ala Lys Glu Ala Ala Pro Ala Pro Pro Thr Glu Glu  
 180 185 190  
 Asp Ile Trp Phe Asp Asp Val Asp Pro Ala Asp Ile Glu Ala Ala Ile  
 195 200 205  
 Gly Pro Glu Ala Ala Lys Ile Ala Arg Lys Gln Leu Gly Gln Ser Glu  
 210 215 220  
 Gly Ser Val Ser Leu Ser Leu Val Lys Glu Gln Ala Phe Gly Gly Leu  
 225 230 235 240  
 Thr Arg Ala Leu Ala Leu Asp Cys Glu Met Val Gly Val Gly Pro Lys  
 245 250 255  
 Gly Glu Glu Ser Met Ala Ala Arg Val Ser Ile Val Asn Gln Tyr Gly  
 260 265 270  
 Lys Cys Val Tyr Asp Lys Tyr Val Lys Pro Thr Glu Pro Val Thr Asp  
 275 280 285  
 Tyr Arg Thr Ala Val Ser Gly Ile Arg Pro Glu Asn Leu Lys Gln Gly  
 290 295 300

Glu Glu Leu Glu Val Val Gln Lys Glu Val Ala Glu Met Leu Lys Gly  
 305 310 315 320  
 Arg Ile Leu Val Gly His Ala Leu His Asn Asp Leu Lys Val Leu Phe  
 325 330 335  
 Leu Asp His Pro Lys Lys Lys Ile Arg Asp Thr Gln Lys Tyr Lys Pro  
 340 345 350  
 Phe Lys Ser Gln Val Lys Ser Gly Arg Pro Ser Leu Arg Leu Leu Ser  
 355 360 365  
 Glu Lys Ile Leu Gly Leu Gln Val Gln Gln Ala Glu His Cys Ser Ile  
 370 375 380  
 Gln Asp Ala Gln Ala Ala Met Arg Leu Tyr Val Met Val Lys Lys Glu  
 385 390 395 400  
 Trp Glu Ser Met Ala Arg Asp Arg Arg Pro Leu Leu Thr Ala Pro Asp  
 405 410 415  
 His Cys Ser Asp Asp Ala  
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&lt;210&gt; 149

&lt;211&gt; 2103

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 149

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 gcttcagga tcctgagatc cggagcagcc ggggtcggag cggctcctca agagtactg 180  
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 gaacatcata atggaaatct cacagacccc tcttcagtga atgaaaagaa gaggagggag 300  
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&lt;210&gt; 150

&lt;211&gt; 406

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 150

Met Ala Glu Asn Gly Lys Asn Cys Asp Gln Arg Arg Val Ala Met Asn  
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Lys Glu His His Asn Gly Asn Phe Thr Asp Pro Ser Ser Val Asn Glu  
 20 25 30

Lys Lys Arg Arg Glu Arg Glu Glu Arg Gln Asn Ile Val Leu Trp Arg  
 35 40 45

Gln Pro Leu Ile Thr Leu Gln Tyr Phe Ser Leu Glu Ile Leu Val Ile  
 50 55 60

Leu Lys Glu Trp Thr Ser Lys Leu Trp His Arg Gln Ser Ile Val Val  
 65 70 75 80

Ser Phe Leu Leu Leu Ala Val Leu Ile Ala Thr Tyr Tyr Val Glu  
 85 90 95

Gly Val His Gln Gln Tyr Val Gln Arg Ile Glu Lys Gln Phe Leu Leu  
 100 105 110

Tyr Ala Tyr Trp Ile Gly Leu Gly Ile Leu Ser Ser Val Gly Leu Gly  
 115 120 125

Thr Gly Leu His Thr Phe Leu Leu Tyr Leu Gly Pro His Ile Ala Ser  
 130 135 140

Val Thr Leu Ala Ala Tyr Glu Cys Asn Ser Val Asn Phe Pro Glu Pro  
 145 150 155 160

Pro Tyr Pro Asp Gln Ile Ile Cys Pro Asp Glu Glu Gly Thr Glu Gly  
 165 170 175

Thr Ile Ser Leu Trp Ser Ile Ile Ser Lys Val Arg Ile Glu Ala Cys  
 180 185 190

Met Trp Gly Ile Gly Thr Ala Ile Gly Glu Leu Pro Pro Tyr Phe Met  
 195 200 205

Ala Arg Ala Ala Arg Leu Ser Gly Ala Glu Pro Asp Asp Glu Glu Tyr  
 210 215 220

Gln Glu Phe Glu Glu Met Leu Glu His Ala Glu Ser Ala Gln Asp Phe  
 225 230 235 240

Ala Ser Arg Ala Lys Leu Ala Val Gln Lys Leu Val Gln Lys Val Gly

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<210> 151
<211> 1330
<212> DNA
<213> Homo sapiens
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<400> 151						
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aataaattca	aaattatgtt	ctcatttttt	tccctggaac	tcaataactc	atttcactgg	1260



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 aaaaaaaaaa 1330

<210> 152  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 152  
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 Glu Gln Ala Met Pro Gly Ala Gly Pro Gly Val Pro Gln Leu Gly Asn  
 35 40 45  
 Met Ala Val Ile His Ser His Leu Trp Lys Gly Leu Gln Glu Lys Phe  
 50 55 60  
 Leu Lys Gly Glu Pro Lys Val Leu Gly Val Val Gln Ile Leu Thr Ala  
 65 70 75 80  
 Leu Met Ser Leu Ser Met Gly Ile Thr Met Met Cys Met Ala Ser Asn  
 85 90 95  
 Thr Tyr Gly Ser Asn Pro Ile Ser Val Tyr Ile Gly Tyr Thr Ile Trp  
 100 105 110  
 Gly Ser Val Met Phe Ile Ile Ser Gly Ser Leu Ser Ile Ala Ala Gly  
 115 120 125  
 Ile Arg Thr Thr Lys Gly Leu Val Arg Gly Ser Leu Gly Met Asn Ile  
 130 135 140  
 Thr Ser Ser Val Leu Ala Ala Ser Gly Ile Leu Ile Asn Thr Phe Ser  
 145 150 155 160  
 Leu Ala Phe Tyr Ser Phe His His Pro Tyr Cys Asn Tyr Tyr Gly Asn  
 165 170 175  
 Ser Asn Asn Cys His Gly Thr Met Ser Ile Leu Met Gly Leu Asp Gly  
 180 185 190  
 Met Val Leu Leu Leu Ser Val Leu Glu Phe Cys Ile Ala Val Ser Leu  
 195 200 205  
 Ser Ala Phe Gly Cys Lys Val Leu Cys Cys Thr Pro Gly Gly Val Val  
 210 215 220  
 Leu Ile Leu Pro Ser His Ser His Met Ala Glu Thr Ala Ser Pro Thr  
 225 230 235 240  
 Pro Leu Asn Glu Val  
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<210> 153  
 <211> 1724

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 153

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attaaaccac ccccaatcat tggaagattt ggaacctcac tgaaaattgg tattgttggg 180
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1724

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&lt;210&gt; 154

&lt;211&gt; 396

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 154

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Met Pro Pro Lys Lys Gly Gly Asp Gly Ile Lys Pro Pro Pro Ile Ile
  1              5              10              15

Gly Arg Phe Gly Thr Ser Leu Lys Ile Gly Ile Val Gly Leu Pro Asn
  20              25              30

Val Gly Lys Ser Thr Phe Phe Asn Val Leu Thr Asn Ser Gln Ala Ser
  35              40              45

Ala Glu Asn Phe Pro Phe Cys Thr Ile Asp Pro Asn Glu Ser Arg Val
  50              55              60

Pro Val Pro Asp Glu Arg Phe Asp Phe Leu Cys Gln Tyr His Lys Pro
  65              70              75              80

Ala Ser Lys Ile Pro Ala Phe Leu Asn Val Val Asp Ile Ala Gly Leu
  85              90              95

Val Lys Gly Ala His Asn Gly Gln Gly Leu Gly Asn Ala Phe Leu Ser
 100              105              110

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His Ile Ser Ala Cys Asp Gly Ile Phe His Leu Thr Arg Ala Phe Glu  
 115 120 125  
 Asp Asp Asp Ile Thr His Val Glu Gly Ser Val Asp Pro Ile Arg Asp  
 130 135 140  
 Ile Glu Ile Ile His Glu Glu Leu Gln Leu Lys Asp Glu Glu Met Ile  
 145 150 155 160  
 Gly Pro Ile Ile Asp Lys Leu Glu Lys Val Ala Val Arg Gly Gly Asp  
 165 170 175  
 Lys Lys Leu Lys Pro Glu Tyr Asp Ile Met Cys Lys Val Lys Ser Trp  
 180 185 190  
 Val Ile Asp Gln Lys Thr Pro Val Arg Phe Tyr His Asp Trp Asn Asp  
 195 200 205  
 Lys Glu Ile Glu Val Leu Asn Thr His Leu Phe Leu Thr Ser Lys Pro  
 210 215 220  
 Met Val Tyr Leu Val Asn Leu Ser Glu Lys Asp Tyr Ile Arg Lys Lys  
 225 230 235 240  
 Asn Lys Trp Leu Ile Lys Ile Lys Glu Trp Val Asp Lys Tyr Asp Pro  
 245 250 255  
 Gly Ala Leu Val Ile Pro Phe Ser Gly Ala Leu Glu Leu Lys Leu Gln  
 260 265 270  
 Glu Leu Ser Ala Glu Glu Arg Gln Lys Tyr Leu Glu Ala Asn Met Thr  
 275 280 285  
 Gln Ser Ala Leu Pro Lys Ile Ile Lys Ala Gly Phe Ala Ala Leu Gln  
 290 295 300  
 Leu Glu Tyr Phe Phe Thr Ala Gly Pro Asp Glu Val Arg Ala Trp Thr  
 305 310 315 320  
 Ile Arg Lys Gly Thr Lys Ala Pro Gln Ala Ala Gly Lys Ile His Thr  
 325 330 335  
 Asp Phe Glu Lys Gly Phe Ile Met Ala Glu Val Met Lys Tyr Glu Asp  
 340 345 350  
 Phe Lys Glu Glu Gly Ser Glu Asn Ala Val Lys Ala Ala Gly Lys Tyr  
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 385 390 395

<210> 155  
 <211> 2291  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 155

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aaaaaaaaaa a                                     2291

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&lt;210&gt; 156

&lt;211&gt; 211

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 156

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Met Arg Leu Phe Leu Trp Asn Ala Val Leu Thr Leu Phe Val Thr Ser
  1              5              10              15

Leu Ile Gly Ala Leu Ile Pro Glu Pro Glu Val Lys Ile Glu Val Leu
      20              25              30

Gln Lys Pro Phe Ile Cys His Arg Lys Thr Lys Gly Gly Asp Leu Met
      35              40              45

Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly Ser Leu Phe His
      50              55              60

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Ser Thr His Lys His Asn Asn Gly Gln Pro Ile Trp Phe Thr Leu Gly  
 65 70 75 80

Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln Gly Leu Lys Gly Met Cys  
 85 90 95

Val Gly Glu Lys Arg Lys Leu Ile Ile Pro Pro Ala Leu Gly Tyr Gly  
 100 105 110

Lys Glu Gly Lys Gly Lys Ile Pro Pro Glu Ser Thr Leu Ile Phe Asn  
 115 120 125

Ile Asp Leu Leu Glu Ile Arg Asn Gly Pro Arg Ser His Glu Ser Phe  
 130 135 140

Gln Glu Met Asp Leu Asn Asp Asp Trp Lys Leu Ser Lys Asp Glu Val  
 145 150 155 160

Lys Ala Tyr Leu Lys Lys Glu Phe Glu Lys His Gly Ala Val Val Asn  
 165 170 175

Glu Ser His His Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp  
 180 185 190

Glu Asp Lys Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His  
 195 200 205

Asp Glu Leu  
 210

&lt;210&gt; 157

&lt;211&gt; 2229

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 157

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aaaaaaaaa
2229

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&lt;210&gt; 158

&lt;211&gt; 239

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 158

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Met Thr Ser Met Pro Ser Glu Lys Gln Asn Val Val Ile Gln Val Val
  1              5              10              15

Asp Lys Leu Lys Gly Phe Ser Ile Ala Pro Asp Val Cys Glu Thr Thr
      20              25              30

Thr His Val Leu Ser Gly Lys Pro Leu Arg Thr Leu Asn Val Leu Leu
      35              40              45

Gly Ile Ala Arg Gly Cys Trp Val Leu Ser Tyr Asp Trp Val Leu Trp
      50              55              60

Ser Leu Glu Leu Gly His Trp Ile Ser Glu Glu Pro Phe Glu Leu Ser
      65              70              75              80

His His Phe Pro Ala Ala Pro Leu Cys Arg Ser Glu Cys His Leu Ser
      85              90              95

Ala Gly Pro Tyr Arg Gly Thr Leu Phe Ala Asp Gln Pro Ala Met Phe
      100              105              110

Val Ser Pro Ala Ser Ser Pro Pro Val Ala Lys Leu Cys Glu Leu Val
      115              120              125

His Leu Cys Gly Gly Arg Val Ser Gln Val Pro Arg Gln Ala Ser Ile
      130              135              140

Val Ile Gly Pro Tyr Ser Gly Lys Lys Lys Ala Thr Val Lys Tyr Leu
      145              150              155              160

Ser Glu Lys Trp Val Leu Gly Lys Asn Pro Gly Thr Gln Thr Leu Trp
      165              170              175

Cys Gly Pro Asp Leu Trp Thr Gly Phe Gln Gly Gly Arg Arg Gln Ala
      180              185              190

His Thr Pro Phe His Ala Ala Gly Ala Pro Gly Leu Met Ser Gln Pro
      195              200              205

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Pro Ala Ser Ala Leu Ala Ala Ser Cys Gly His Pro Arg His Ser Arg  
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Ser Leu Leu Leu Ala Asp Val Gln Phe Thr Arg Lys Trp Glu Leu  
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 cggatggcag atggggcgcc cctggctgga gtaagggggg gcttgagtga tggggagggt 420  
 cccctgggg gccgggggga ggcacaacga cgaaagaac gagaagaact ggcccaacag 480  
 tatgaagcca tcctacggga gtgtggccac ggccgcttcc agtgacact gtattttgtg 540  
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&lt;210&gt; 160

&lt;211&gt; 742

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 160

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Met Glu Glu Gly Phe Arg Asp Arg Ala Ala Phe Ile Arg Gly Ala Lys
  1             5             10             15

Asp Ile Ala Lys Glu Val Lys Lys His Ala Ala Lys Lys Val Val Lys
      20             25             30

Gly Leu Asp Arg Val Gln Asp Glu Tyr Ser Arg Arg Ser Tyr Ser Arg
      35             40             45

Phe Glu Glu Glu Asp Asp Asp Asp Phe Pro Ala Pro Ser Asp Gly
      50             55             60

Tyr Tyr Pro Gly Glu Gly Thr Gln Asp Glu Glu Glu Gly Gly Ala Ser
      65             70             75             80

Ser Asp Ala Thr Glu Gly His Asp Glu Asp Asp Asp Ile Tyr Glu Gly
      85             90             95

Glu Tyr Gln Gly Ile Pro Arg Ala Glu Ser Gly Gly Lys Gly Glu Arg
      100            105            110

Met Ala Asp Gly Ala Pro Leu Ala Gly Val Arg Gly Gly Leu Ser Asp
      115            120            125

Gly Glu Gly Pro Pro Gly Gly Arg Gly Glu Ala Gln Arg Arg Lys Glu
      130            135            140

Arg Glu Glu Leu Ala Gln Gln Tyr Glu Ala Ile Leu Arg Glu Cys Gly
      145            150            155            160

His Gly Arg Phe Gln Trp Thr Leu Tyr Phe Val Leu Gly Leu Ala Leu
      165            170            175

Met Ala Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu Pro Ser
      180            185            190

Ala Glu Lys Asp Met Cys Leu Ser Asp Ser Asn Lys Gly Met Leu Gly
      195            200            205

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Leu Ile Val Tyr Leu Gly Met Met Val Gly Ala Phe Leu Trp Gly Gly  
 210 215 220  
 Leu Ala Asp Arg Leu Gly Arg Arg Gln Cys Leu Leu Ile Ser Leu Ser  
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 Val Asn Ser Val Phe Ala Phe Phe Ser Ser Phe Val Gln Gly Tyr Gly  
 245 250 255  
 Thr Phe Leu Phe Cys Arg Leu Leu Ser Gly Val Gly Ile Gly Gly Ser  
 260 265 270  
 Ile Pro Ile Val Phe Ser Tyr Phe Ser Glu Phe Leu Ala Gln Glu Lys  
 275 280 285  
 Arg Gly Glu His Leu Ser Trp Leu Cys Met Phe Trp Met Ile Gly Gly  
 290 295 300  
 Val Tyr Ala Ala Ala Met Ala Trp Ala Ile Ile Pro His Tyr Gly Trp  
 305 310 315 320  
 Ser Phe Gln Met Gly Ser Ala Tyr Gln Phe His Ser Trp Arg Val Phe  
 325 330 335  
 Val Leu Val Cys Ala Phe Pro Ser Val Phe Ala Ile Gly Ala Leu Thr  
 340 345 350  
 Thr Gln Pro Glu Ser Pro Arg Phe Phe Leu Glu Asn Gly Lys His Asp  
 355 360 365  
 Glu Ala Trp Met Val Leu Lys Gln Val His Asp Thr Asn Met Arg Ala  
 370 375 380  
 Lys Gly His Pro Glu Arg Val Phe Ser Val Thr His Ile Lys Thr Ile  
 385 390 395 400  
 His Gln Glu Asp Glu Leu Ile Glu Ile Gln Ser Asp Thr Gly Thr Trp  
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 Tyr Gln Arg Trp Gly Val Arg Ala Leu Ser Leu Gly Gly Gln Val Trp  
 420 425 430  
 Gly Asn Phe Leu Ser Cys Phe Gly Pro Glu Tyr Arg Arg Ile Thr Leu  
 435 440 445  
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 450 455 460  
 Thr Val Trp Phe Pro Asp Met Ile Arg His Leu Gln Ala Val Asp Tyr  
 465 470 475 480  
 Ala Ser Arg Thr Lys Val Phe Pro Gly Glu Arg Val Glu His Val Thr  
 485 490 495  
 Phe Asn Phe Thr Leu Glu Asn Gln Ile His Arg Gly Gly Gln Tyr Phe  
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 515 520 525

Ser Leu Phe Glu Glu Cys Tyr Phe Glu Asp Val Thr Ser Ser Asn Thr  
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Phe Phe Arg Asn Cys Thr Phe Ile Asn Thr Val Phe Tyr Asn Thr Asp  
 545 550 555 560

Leu Phe Glu Tyr Lys Phe Val Asn Ser Arg Leu Ile Asn Ser Thr Phe  
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Leu His Asn Lys Glu Gly Cys Pro Leu Asp Val Thr Gly Thr Gly Glu  
 580 585 590

Gly Ala Tyr Met Val Tyr Phe Val Ser Phe Leu Gly Thr Leu Ala Val  
 595 600 605

Leu Pro Gly Asn Ile Val Ser Ala Leu Leu Met Asp Lys Ile Gly Arg  
 610 615 620

Leu Arg Met Leu Ala Gly Ser Ser Val Met Ser Cys Val Ser Cys Phe  
 625 630 635 640

Phe Leu Ser Phe Gly Asn Ser Glu Ser Ala Met Ile Ala Leu Leu Cys  
 645 650 655

Leu Phe Gly Gly Val Ser Ile Ala Ser Trp Asn Ala Leu Asp Val Leu  
 660 665 670

Thr Val Glu Leu Tyr Pro Ser Asp Lys Arg Thr Thr Ala Phe Gly Phe  
 675 680 685

Leu Asn Ala Leu Cys Lys Leu Ala Ala Val Leu Gly Ile Ser Ile Phe  
 690 695 700

Thr Ser Phe Val Gly Ile Thr Lys Ala Ala Pro Ile Leu Phe Ala Ser  
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<400> 191  
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<210> 192

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29

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<400> 193  
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29

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29

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<210> 202  
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20 25 30  
Tyr Arg Lys Glu Lys Ala Leu Thr Glu Glu Met Val Met Leu Ser Val  
35 40 45  
Ser Leu Pro Ser Leu Ser Ala Glu Arg Leu Gly Glu Gly Pro Gln Pro  
50 55 60  
Pro Ser Leu Val Lys Leu Pro Val Trp Ser Met Thr Val Phe His Pro  
65 70 75 80

Arg Leu Trp Glu Ala Pro  
85

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Ser Glu Ala Ser Ala Asn Leu Gly Gly Val Pro Ser Lys Arg Leu Lys  
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Met Gln Tyr Ala Thr Gly Pro Leu Leu Lys Phe Gln Ile Cys Val Ser  
35 40 45

<210> 240  
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<400> 240  
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Glu Asn Pro Phe Leu Glu Val Ser Ala Pro Ser Glu His Phe Ile Glu  
35 40 45  
Asn Asn Asn Thr Lys Asp Thr Thr Ala Arg Asn Ala Phe Glu Glu Asn  
50 55 60  
Val Phe Met Glu Asn Thr Asn Met Pro Glu Gly Thr Ile Ser Glu Asn  
65 70 75 80  
Thr Asn Tyr Asn His Pro Pro Glu Ala Asp Ser Ala Gly Thr Ala Phe  
85 90 95  
Asn Leu Gly Pro Thr Val Lys Gln Thr Glu Thr Lys Trp Glu Tyr Asn  
100 105 110  
Asn Val Gly Thr Asp Leu Ser Pro Glu Pro Lys Ser Phe Asn Tyr Pro  
115 120 125  
Leu Leu Ser Ser Gln Val Ile Ser Leu Lys Phe Ser  
130 135 140

## INTERNATIONAL SEARCH REPORT

 International application No.  
 PCT/US99/18298

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(6) : Please See Extra Sheet. US CL : Please See Extra Sheet. According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 536/23.1, 23.5; 530/300, 350; 435/69.1, 320.1, 325, 252.3, 254.11; 514/2, 12 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WEST, MEDLINE search terms: co627, kenneth jacobs		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	WO 98/45436 A2 (GENETICS INSTITUTE, INC.) 15 October 1998, especially SEQ ID NO: 407 on pages 221, and claim 1.	1
X	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA) GenBank Accession Number AA287697 NCI-CGAP <a href="http://www.ncbi.nlm.nih.gov/ncicgap">http://www.ncbi.nlm.nih.gov/ncicgap</a> . 'National Cancer Institute, Cancer Genome Anatomy Project (CGAP), Tumor Gene Index'. 13 August 1997.	1-3
X	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA) GenBank Accession Number AA179549. HILLIER et al. 'WashU-Merck EST Project'. 31 December 1996.	1-3
X	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA) GenBank Accession Number AA057573. HILLIER et al. 'Generation and analysis of 280,00 human expressed sequence tags'. 02 February 1997.	1-3
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: *A* document defining the general state of the art which is not considered to be of particular relevance *B* earlier document published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art *A* document member of the same patent family	
Date of the actual completion of the international search 02 NOVEMBER 1999		Date of mailing of the international search report 09 DEC 1999
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230		Authorized officer CLAIRE M. KAUFMAN Telephone No. (703) 308-0196



## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/18298

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BOSSY et al. Conservation of neural nicotinic acetylcholine receptors from Drosophila to vertebrate central nervous systems. EMBO J. June 1988, Vol.7, No. 3, pages 611-618, especially Figure 2.	1-7, 9, 11
X,P	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA) GenBank Accession Number AL035661. SULSTON J. 'Direct Submission'. 15 March 1999.	1

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/18298

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-11

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/18298

## A. CLASSIFICATION OF SUBJECT MATTER:

IPC (6):

C07K 14/435, 14/00, 7/06; C12N 5/10, 15/10, 15/11, 15/12, 15/63; A61K 38/16

## A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

536/23.1, 23.5; 530/300, 350; 435/69.1, 320.1, 325, 252.3, 254.11; 514/2, 12

## BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claim(s) 1-11, drawn to polynucleotide of clone co62\_12, gene, vector, host cell, method of producing a protein and encoded protein.

Group II-LXXIX, each group consisting of two consecutive claims, drawn to polynucleotide of a distinct clone and encoded protein.

The inventions listed as Groups I-LXXIX do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I corresponds to the first invention wherein the first product is the polynucleotide and the first method of using is the method of making the protein. Note there is no method of making the polynucleotide. The invention also includes the protein made. Each group does not share the same or corresponding special technical feature because each group is drawn to a different polynucleotide and encoded protein. This Authority therefore considers that the several inventions do not share a special technical feature within the meaning of PCT Rule 13.2 and thus do not relate to a single general inventive concept within the meaning of PCT Rule 13.1.